FORMER CANINE KENNEL SITE
GABRESKI AIRPORT
WESTHAMPTON BEACH, NEW YORK
BCP SITE ID: C152079
IHWDS SITE ID: 152079

GROUNDWATER SAMPLING REPORT

SUBMITTED TO:

New York State Department of Environmental Conservation
Division of Environmental Remediation
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PWGC
Strategic Environmental Engineering Solutions

GROUNDWATER SAMPLING REPORT
FORMER CANINE KENNEL SITE

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1.0 INTRODUCTION

P.W. Grosser Consulting Engineer and Hydrogeologist, PC (PWGC) has prepared the following Status Report on behalf of the Suffolk County Department of Health Services to document the implementation of routine groundwater sampling conducted at the Former Canine Kennel Site in Westhampton Beach, New York (the Site). The Site was remediated under the oversight of the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) #C152079. This report was prepared in accordance with the Draft Site Management Plan (SMP) dated October 2017. This report documents the first semi-annual post remediation groundwater sampling event specified in the SMP.

1.1 Site Location and Description

The site is located in the County of Suffolk, New York and is identified as a portion of Suffolk County Tax Map Lot 0900-312.00-01.00-004.002. The site is situated on an approximately one-acre area bounded by wooded land (Pine Barrens) to the north, east and south, and a boat storage yard to the west (see **Figure 1**).

The site is located on the eastern edge of the Francis S. Gabreski Airport. The site adjacent to and west of the site is occupied by a boat storage facility, further west are the runways and the support buildings for the airport. Immediately north and south of the site are undeveloped areas of the airport site. The Quogue Wildlife Refuge is located to the east of the site.

1.2 Site History

In 1943, the federal government built the airport for use as an Air Force base during World War II. After the war, it was given to Suffolk County. In 1951, the airport was reclaimed for the Korean War National Emergency. In 1960, the US Air Force leased the site for an Air Defense Command Base, which was deactivated in 1969, then released back to Suffolk County in 1970.

During deactivation activities (Spring 1970), the Suffolk County Air Force Base used the Canine Kennel Area to bury inert wastes, such as office furniture. The site was also used for the disposal of polychlorinated biphenyl (PCB) containing electrical distribution equipment such as transformers and capacitors.

1.3 Hydrogeologic Setting

1.3.1 Regional Geology/Hydrogeology

The geologic setting of Long Island is well documented and consists of crystalline bedrock composed of schist and gneiss overlain by layers of unconsolidated deposits. Immediately overlying the bedrock is the Raritan Formation, consisting of the Lloyd sand confined by the Raritan clay Member. The Lloyd sand is an aquifer and

consists of discontinuous layers of gravel, sand, sandy and silty clay, and solid clay. The Raritan clay is a solid and silty clay with that is gray, red or white in color with few lenses of sand and gravel and abundant lignite and pyrite.

Above the Raritan Clay lies the Magothy Formation. The Magothy aquifer consists of layers of fine to coarse sand of moderate to high permeability, with inter-bedded lenses of silt and clay of low permeability resulting in areas of preferential horizontal flow. Therefore, this aquifer generally becomes more confined with depth. The Magothy Formation is overlain by the Upper Glacial deposits which contains the Upper Glacial aquifer. The Upper Glacial aquifer is the water-table aquifer at this location and is comprised of medium to coarse sand and gravel with occasional thin lenses of fine sand and brown clay. This aquifer extends from the water table to the top of the Magothy and, therefore, is hydraulically connected to the Magothy aquifer.

The aquifer of concern at the former Canine Kennel site is the Upper Glacial aquifer which is an unconsolidated mixture of sand and gravel. The Upper Glacial aquifer is approximately 100 feet thick (saturated zone) at the site and has an estimated average horizontal hydraulic conductivity (permeability) of 270 feet/day and a vertical hydraulic conductivity of 27 feet/day (Franke & Cohen, 1972).

Clay layers, such as the Gardiners clay and the "20-Foot-clay," where present, may act as local confining units, separating the Upper Glacial aquifer from the underlying Magothy aquifer which is the principal source of drinking water in Suffolk County. These clay layers extend throughout much of the south shore of Long Island and are present just south of the site.

1.3.2 Site Geology/Hydrogeology

Based on data collected during monitoring well installation, depth to groundwater ranged from approximately 9.5 to 14.5 feet bgs. No confining unit (clay) was present at the monitoring well locations to the depth investigated. Regional groundwater flow at the site is to the southeast. Based upon the groundwater measurements obtained from the site monitoring wells on August 22, 2018, local groundwater flow direction was determined to be to the east-southeast (**Figure 2**).

1.4 Previous Investigations

In March 1984, the NYSDEC investigated the site in response to a complaint from a local citizen's group. At that time, the NYSDEC observed several half-buried capacitors leaking PCB oil within a ten-foot deep pit. In May 1984, nine soil samples were collected for laboratory analysis. Eight contained the PCB Aroclor-1254 in concentrations up to 1,700 parts per million (ppm).

In January 1986, a NYSDEC contractor noted that the pit was only half as deep as previously stated, and that the capacitors were no longer visible. The area showed signs of recent earthwork activities and was devoid of vegetation.

In November 1996, Dvirka and Bartilucci Consulting Engineers (D & B) performed a preliminary site assessment. D & B determined regional groundwater flow direction to be towards the southeast, and installed and sampled one up-gradient (GP-1) and five down-gradient (GP-2 through GP-6) Geoprobe® monitoring wells. Groundwater was encountered between 9 and 12 feet below grade. Two groundwater samples were obtained from each Geoprobe® location, one at the water table interface and one at 15 feet below the water table. PCBs were below detection limits in each of the 12 samples analyzed. Traces of the pesticides 4,4'-DDD and 4,4'-DDT were detected in the up-gradient well only. Based upon the groundwater results, D & B prepared a Preliminary Site Assessment (PSA) report (1998) that stated that PCBs previously detected in surface soils were not impacting local groundwater quality. The NYSDEC has also concluded that PCBs have not impacted local groundwater.

In July 2000, the NYSDEC performed additional soil sampling. Thirteen soil samples were collected at six locations at two depths (surface (0-4") and subsurface (2'-4') below grade) and one soil sample was removed from the end of a capacitor located at the site. The highest soil concentration found was 280,000 ppm adjacent to a capacitor. There was a "hot spot" identified near soil samples #1, 2 and 5, where the levels ranged from 1,900 ppm to 150,000 ppm at the surface and 120 ppm to 20,000 ppm at 2.5' to 3.5' below grade. Soil #3 and #4 contained PCBs levels of 3.9 ppm and 17 ppm at the surface, and less than 10 ppm at a depth of 2.5'. Concentrations of PCBs at soil sample #6 were less than 1.0 ppm. These samples were obtained from the same area previously sampled in May 1984.

1.5 Remedial Investigation

In November 2008, PWGC performed a Remedial Investigation (RI) at the former Canine Kennel site. The investigation consisted of a geophysical survey, soil and groundwater sampling, test pit excavations and the removal of identified capacitors suspected to contain PCBs.

Geophysical and test pit investigations confirmed that the area of disposal was limited to the western/central portion of the site adjacent to the fence line and boatyard.

The PCB Aroclor-1254 was detected in soil samples ranging in depth from 0-2 inches below ground surface (bgs) to approximately 8.5 feet bgs. Fifty-nine soil samples had concentrations of Aroclor-1254 above the Residential Use Soil Cleanup Objective (RUSCO) of 1.0 ppm ranging from 1.1 to 86,000 ppm (directly underneath one of the removed capacitors). Surface soil samples showed the largest area of impact (across the western and central areas of the site). PCBs were also detected at concentrations greater than the RUSCO in surface soils within the unpaved eastern portion of the adjacent boatyard. Spread of PCBs within surface soils at the site was determined to likely be a result of physical processes, including localized surface runoff of PCB-contaminated soils from the on-site disposal area westward following the surface topography.

PCBs in the 2.0-2.5 feet depth samples were limited to the western central area of the site and coincide with the main area of existing debris and the former capacitor locations. Three isolated areas of impact at depths of 4.0 feet bgs or greater were also identified, two of which coincided with the main area of debris and the former capacitor locations. A third area was identified northeast of the capacitor locations. No pesticides were detected at concentrations exceeding Residential Use SCOs in soil samples collected at the site.

Based on the findings of the RI completed in November 2008, PWGC recommended that an IRM be implemented at the site to remove PCB impacted soils from the unpaved portion of the boatyard and former capacitor areas.

1.6 Interim Remedial Measure

An IRM was implemented by Suffolk County at the adjacent boatyard and former capacitor area locations at the Former Canine Kennel site. Soils were removed to a depth of one foot bgs in the vicinity of former capacitor locations where PCB concentrations exceeded 1,000 ppm. Where removals occurred, residual levels were generally below 1 ppm (the Residential Use Soil Cleanup Objective). For example, endpoint samples collected from capacitor locations CA-2 and CA-3 were below the 1.0 ppm for PCBs, while the endpoint sample from capacitor location CA-1 only slightly exceeded the NYSDEC RUSCO (1.2 ppm). The offsite IRM in the boatyard achieved 1 ppm in all endpoint samples. The IRM was completed in April 2013 IRM excavation activities within the boatyard and capacitor locations generated a total of 227.23 tons of PCB contaminated soils. Backfill imported to return excavated areas to the original grade met Residential Use Soil Cleanup Objectives.

1.7 Remedial Action

Implementation of remedial action at the site included the removal of PCB impacted soil and debris exceeding a site-specific SCO of 10 ppm, and installation of a cap of clean fill material in areas where PCB impact exceeded 1 ppm. As part of remediation, a total of 1,866 tons of PCB impacted soils, 6.5 tons of suspect PCB containing

capacitors, and 220 cubic yards of miscellaneous PCB impacted debris (scrap metal, wood, etc.) was removed from the site and properly disposed of. Following removal, a total of approximately 740 cubic yards of clean fill material was imported to backfill and cap the site to prevent human exposure to residual contaminated soil/fill remaining at the site.

Additionally, as part of remedial activities, groundwater samples were collected in January 2017 from the six monitoring wells present at the site. PCBs were detected at concentrations exceeding their respective AWQS in samples collected from monitoring wells MW-03 (0.524 ppb) and MW-04 (0.595 ppb). Based on this, the Draft Site Management Plan (SMP) for the site included a minimum of one year of semi-annual groundwater sampling to monitor PCB impact to groundwater at the site. Additionally, at NYSDEC's request the first round of groundwater sampling specified in the Draft SMP would include emerging contaminants; per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane.

2.0 GROUNDWATER MONITORING AND SAMPLING

Groundwater sampling activities were performed on August 22, 2018.

2.1 Groundwater Monitoring

Groundwater monitoring of the wells consisted of collecting and recording depth to water for six groundwater monitoring wells. Water levels were collected using a Solinst Oil / Water Interface Probe or equivalent. **Figure 2** displays the location of the monitoring wells and groundwater elevation data.

2.2 Groundwater Sampling

During this sampling event groundwater samples were collected from each of the six monitoring wells at the site on August 22, 2018.

2.2.1 Sampling Protocol

Prior to sampling, each well was gauged with an electronic interface probe to measure the depth to water, and the depth to the bottom of the well. Wells were purged using a peristaltic pump fitted with dedicated high-density polyethylene (HDPE) tubing under low flow conditions. During purging, the groundwater parameters pH, temperature, conductivity, oxygen reduction potential (ORP), turbidity, and dissolved oxygen were monitored every three minutes with a Horiba U52 water quality instrument. When measurements stabilized in accordance with the United States Environmental Protection Agency (USEPA) standard operating procedure EQASOP-GW001, purging was completed, and the water quality meter was disconnected. The groundwater sample was then collected directly from the tubing and placed in pre-cleaned laboratory-supplied glassware and packed in a cooler on ice for delivery to the laboratory under chain-of-custody seal.

Copies of the well sampling logs containing the field parameters recorded and purge volumes for each sampling point are attached in **Appendix B**.

2.2.2 QA/QC Sampling

In addition to routine samples, one MS/MSD sample was collected from monitoring well MW-03, a blind duplicate sample was collected from MW-01, and a field blank was collected.

2.2.3 Sample Analysis

Sample analysis was performed by York Analytical of Stratford, Connecticut a NYSDOH ELAP certified laboratory (ELAP ID 10854). Each sample was analyzed for the following:

- PCBs by USEPA Method 8082.

- PFAS by USEPA Method 537 (Modified).
- 1,4-Dioxane by USEPA Method 8270.

2.2.4 Analytical Results

Groundwater analytical results were compared to the NYSDEC Class GA Groundwater Quality Standards (AWQS) as specified in the Technical Operation and Guidance Series (TOGS 1.1.1) guidance documents dated June 1998 and its addendum dated April 2000, and the USEPA Health Advisory Levels for PFAS. Data is summarized in **Tables 1 and 2**; a copy of the laboratory report is included as Appendix C.

PCBs were detected at concentrations exceeding their respective AWQS in samples collected from monitoring wells MW-03 and MW-04. Monitoring wells MW-03 and MW-04 were the two wells where elevated PCB concentrations were detected during the previous groundwater sampling event that took place during remedial action (January 2017); concentrations during the current sampling event showed a slight decrease from the previous sampling event.

- PFAS compounds perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were detected in each of the monitoring wells at the site. Concentrations exceeding the USEPA HAL of 70 parts per trillion (ppt) for PFOA and PFOS were detected in monitoring wells MW-01, MW-05, and MW-06. The total PFOA/PFOS concentrations ranged from 35.2 ng/l (MW-3) to 17,150 ng/l (MW-1). The highest PFOA and PFOS concentrations were detected in monitoring well MW-01, which is the upgradient well for the site indicating that the source of PFAS impact is likely off-site and upgradient of the Canine Kennel Site. Other PFAS compounds detected in at least one sample include; Perfluorobutanesulfonic acid (PFBS), Perfluorohexanoic acid (PFHxA), Perfluoroheptanoic acid (PFHpA), Perfluorobutanoic acid (PFBA), Perfluoroheptanesulfonic Acid (PFHpS), Perfluoropentanoic acid (PFPeA), Perfluorohexanesulfonic acid (PFHxS), 8:2 Fluorotelomer sulfonate (6:2FTS), Perfluorononanoic acid (PFNA), Perfluorodecanoic acid (PFDA), and NEtFOSAA.

1,4-Dioxane was not detected in groundwater samples collected from the site.

3.0 CONCLUSIONS AND RECOMMENDATIONS

This Groundwater Sampling Report documents the first semi-annual groundwater sampling event specified in the Draft SMP for the site. Groundwater sampling activities were performed on August 22, 2018.

3.1 Conclusions

During this reporting period, groundwater samples were collected from six onsite monitoring wells. Based on analytical results, PWGC offers the following conclusions:

- PCBS were detected at concentrations exceeding their respective AWQS in two wells (MW-03 and MW-04). PCB concentrations in these wells showed a slight decrease from the previous sampling event (January 2017)
- PFOA and PFOS were detected at concentrations exceeding their USEPA HAL in three monitoring wells at the site (MW-01, MW-05, MW-06). The highest concentrations were detected in monitoring well MW-01 which is the upgradient well for the site indicating that the source of PFAS impact is likely off-site and upgradient of the Site.
- 1,4-Dioxane was not detected in groundwater samples collected from the site.

3.2 Recommendations

Based on the conclusions above, PWGC offers the following recommendations for the site:

- Continue implementation of the Draft SMP.
- Continue semi-annual groundwater sampling at the site to monitor PCB concentrations. The next semi-annual sampling event will occur in February 2019.
- PFAS data should be reviewed by NYSDEC to evaluate whether additional action is required.

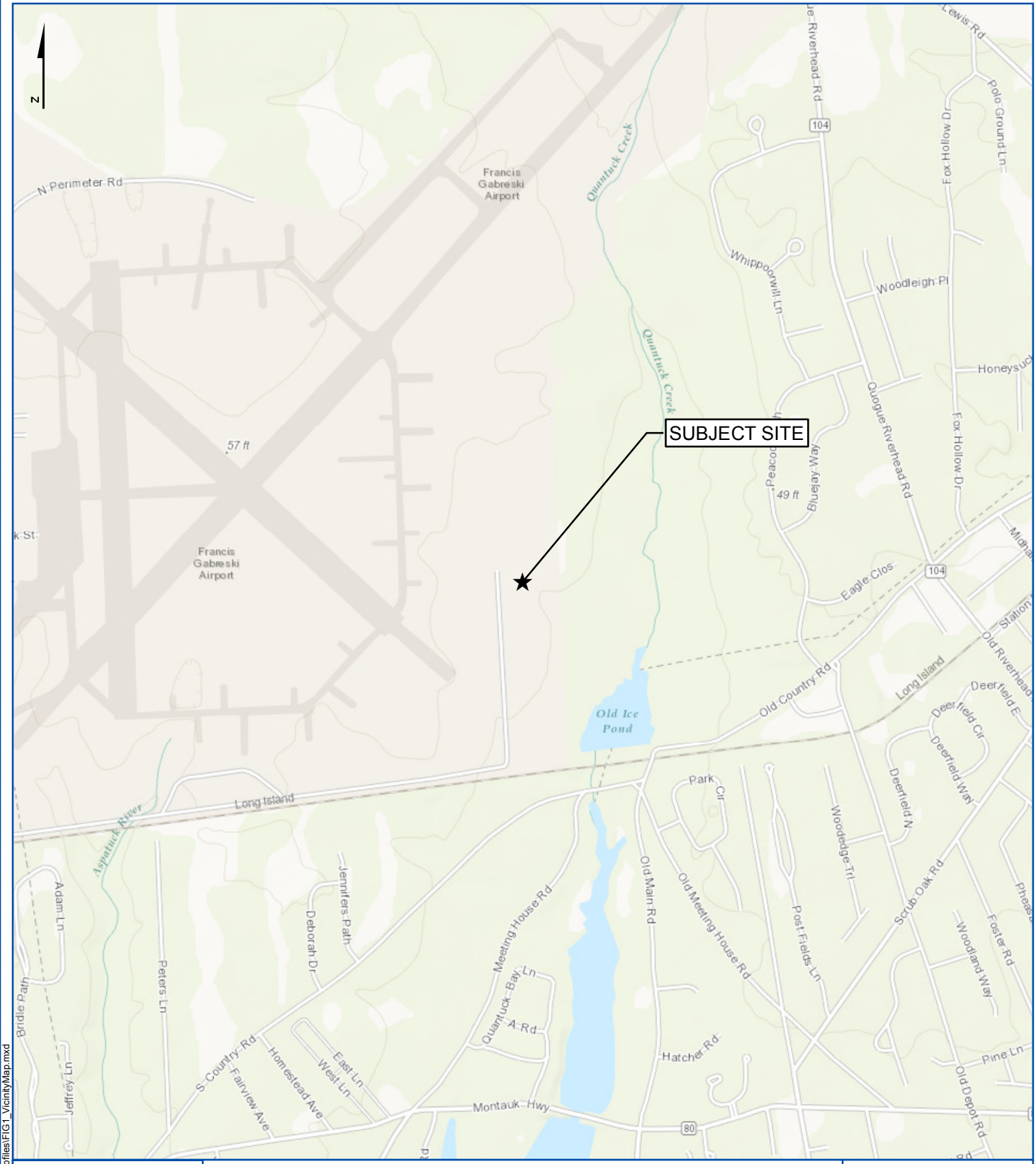
4.0 REFERENCES

NYSDEC, Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values; June 1998 and addendum April 2000.

P.W. Grosser Consulting Engineer & Hydrogeologist, PC, Draft Site Management Plan BCP #C152079, October 2017.

P.W. Grosser Consulting Engineer & Hydrogeologist, PC, Draft Final Engineering Report BCP #C152079, October 2017.

FIGURES



Document Path: G:\Projects\S-Z\SHD1602\mapfiles\FIG1_VicinityMap.mxd

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SITE LOCATION MAP

FORMER CANINE KENNEL - GABRESKI AIRPORT
WESTHAMPTON BEACH, NEW YORK

0 ¼ ½ ¾ 1 Miles

Project:	SHD1602
Date:	5/16/2017
Designed by:	BB
Drawn by:	BB
Approved by:	TM
Figure No:	1

N

Sample ID:	MW-01	
Sampling Date:	8/22/2018	
Analyte	Result Value	Lab Qualifier
Total PCBs (ppb)	0.0588	U
PFOA (ppt)	**150**	
PFOS (ppt)	**17,000**	

MW-1
9.98
10.00'

WOODED AREA

CANINE KENNEL

9.75'

0.09 ppb

MW-6
9.51
9.50'

MW-5
9.48

MW-4
9.42

MW-3
NM

MW-2
9.42

WOODED AREA

Sample ID:	MW-02	
Sampling Date:	8/22/2018	
Analyte	Result Value	Lab Qualifier
Total PCBs (ppb)	0.0606	U
PFOA (ppt)	20	
PFOS (ppt)	20	

Sample ID:	MW-06	
Sampling Date:	8/22/2018	
Analyte	Result Value	Lab Qualifier
Total PCBs (ppb)	0.0606	U
PFOA (ppt)	7.5	
PFOS (ppt)	**260**	

Sample ID:	MW-05	
Sampling Date:	8/22/2018	
Analyte	Result Value	Lab Qualifier
Total PCBs (ppb)	0.0556	U
PFOA (ppt)	17	
PFOS (ppt)	**1,600**	

Sample ID:	MW-04	
Sampling Date:	8/22/2018	
Analyte	Result Value	Lab Qualifier
Total PCBs (ppb)	**0.550**	
PFOA (ppt)	7.4	
PFOS (ppt)	57	

Sample ID:	MW-03	
Sampling Date:	8/22/2018	
Analyte	Result Value	Lab Qualifier
Total PCBs (ppb)	**0.516**	
PFOA (ppt)	27	
PFOS (ppt)	8.2	

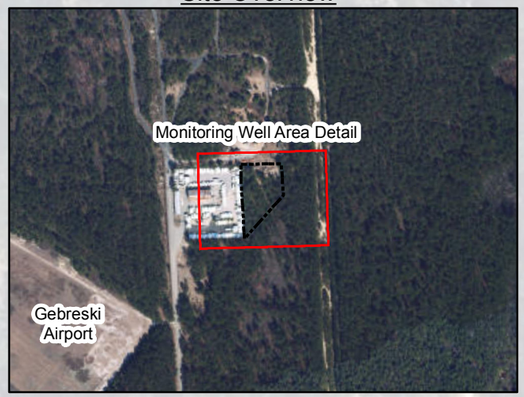
Note: Class GA AWQS of 0.09 ppb for total PCBs
EPA Health Advisory Level of 70 ppt for PFOA & PFOS
Bolded values exceed NY AWQS/EPA Health Advisory Level
U - Non-Detect
NM - Not Measured

- Final Excavation Extent (Remedial Action)
- Monitoring Well
- 9.50 Groundwater Elevation (feet)
- Groundwater Contours
- Inferred Groundwater Contours
- PCB Contours
- Inferred PCB Contours
- CanineKennelPropBounds

0 20 40 80 120 160 Feet

Path: W:\Projects\M-R\RDC\1812\mapfiles\FIG2_PCB_Extent.mxd

Site Overview



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SUFFOLK COUNTY
DEPT. OF HEALTH SERVICES
OFFICE OF POLLUTION CONTROL
15 HORSEBLOCK PLACE
FARMINGVILLE, NEW YORK 11738

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

PROJECT:	SHD1602	APPROVED BY:	TM
DESIGNED BY:	TM	DATE:	9/17/2018
DRAWN BY:	PH	SCALE:	AS SHOWN

SHEET TITLE:

MONITORING WELL LOCATIONS AND EXTENT OF PCBs IN GROUNDWATER

FORMER CANINE KENNEL
GABRESKI AIRPORT
WESTHAMPTON, NEW YORK

FIGURE NO:

2

TABLES

Table 1
Groundwater Sample Analytical Results - PCBs
Former Canine Kennel Site (C152079)
Gabreski Airport, Westhampton Beach, New York

Client Sample ID: Laboratory ID: Sampling Date:	CAS Number	NYSDEC AWQS[1]	MW-1 18H1089-06 8/22/2018	MW-2 18H1089-05 8/22/2018	MW-3 18H1089-04 8/22/2018	MW-4 18H1089-01 8/22/2018	MW-5 18H1089-02 8/22/2018	MW-6 18H1089-03 8/22/2018
Polychlorinated Biphenyls								
Aroclor-1016	12674-11-2	0.09	0.0588 U	0.0606 U	0.0606 U	0.0667 U	0.0606 U	0.0606 U
Aroclor-1221	11104-28-2	0.09	0.0588 U	0.0606 U	0.0606 U	0.0667 U	0.0606 U	0.0606 U
Aroclor-1232	11141-16-5	0.09	0.0588 U	0.0606 U	0.0606 U	0.0667 U	0.0606 U	0.0606 U
Aroclor-1242	53469-21-9	0.09	0.0588 U	0.0606 U	0.0606 U	0.0667 U	0.0606 U	0.0606 U
Aroclor-1248	12672-29-6	0.09	0.0588 U	0.0606 U	0.0606 U	0.0667 U	0.0606 U	0.0606 U
Aroclor-1254	11097-69-1	0.09	0.0588 U	0.0606 U	0.516	0.550	0.0606 U	0.0606 U
Aroclor-1260	11096-82-5	0.09	0.0588 U	0.0606 U	0.0606 U	0.0667 U	0.0606 U	0.0606 U
Total PCBs	1336-36-3	NS	0.0588 U	0.0606 U	0.516	0.550	0.0606 U	0.0606 U

Notes:
All concentrations are ug/L (ppb)
1 - Ambient Water Quality Standards
Highlighted concentrations exceed Ambient Water Quality Standard
J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL).
U - Not detected at the reported detection limit for the sample.
NS - No standard established

Table 2
Groundwater Sample Analytical Results - PFAS Dioxane
Former Canine Kennel Site (C152079)
Gabreski Airport, Westhampton Beach, New York

Client Sample ID: Laboratory ID: Sampling Date:	CAS Number	USEPA HAL[1]	MW-1 18H1089-06 8/22/2018	MW-2 18H1089-05 8/22/2018	MW-3 18H1089-04 8/22/2018	MW-4 18H1089-01 8/22/2018	MW-5 18H1089-02 8/22/2018	MW-6 18H1089-03 8/22/2018
Dioxane								
1,4-Dioxane	123-91-1	NS	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U
PFAS								
Perfluorobutanesulfonic acid (PFBS)		NS	44	2.0 U	2.0 U	2.0 U	4.4	5.2
Perfluorohexanoic acid (PFHxA)		NS	910	11.0	8.8	4.9	78	12
Perfluoroheptanoic acid (PFHpA)		NS	63	7.2	8.8	2.3	6.2	5.3
Perfluorobutanoic acid (PFBA)		NS	21	2.9	3.5	2.0 U	4.7	2.0 U
Perfluorodecanesulfonic acid (PFDS)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluoroheptanesulfonic acid (PFHpS)		NS	160	2.0 U	2.0 U	2.0 U	5.7	2.4
Perfluorooctanesulfonamide (FOSA)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluoropentanoic acid (PFPeA)		NS	210	10	6.9	2.2	17	5.2
6:2 Fluorotelomersulfonate (6:2 FTS)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
8:2 Fluorotelomersulfonate (8:2 FTS)		NS	4.1	2.0 U	2.0 U	2.0 U	2.4	2.0 U
Perfluorohexanesulfonic acid (PFHxS)		NS	4300	7.2	7.7	12	540	190
Perfluorooctanoic acid (PFOA)		70	150	20	27	7.4	17	7.5
Perfluorooctanesulfonic acid (PFOS)		70	17000	20	8.2	57	1600	260
Perfluorononanoic acid (PFNA)		NS	4.1 U	3.8	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorodecanoic acid (PFDA)		NS	2.0 U	2.0 U	2.9	2.0 U	2.0 U	2.0 U
NMeFOSAA		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluoroundecanoic acid (PFUnA)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
NEtFOSAA		NS	2.0 U	2.0 U	2.5	2.0 U	2.0 U	2.0 U
Perfluorododecanoic acid (PFDoA)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorotridecanoic acid (PFTrDA)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorotetradecanoic acid (PFTA)		NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Total PFOA + PFOS		70	17150	40	35.2	64.4	1617	267.5

Notes:
Dioxane concentrations are ug/L (ppb)
PFAS concentrations are ng/L (ppt)
1 - USEPA Health Advisory Level
Highlighted concentrations exceed Ambient Water Quality Standard
J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL).
U - Not detected at the reported detection limit for the sample.
NS - No standard established

APPENDIX A
WELL SAMPLING LOGS

P.W. GROSSER CONSULTING, Inc

Well Sampling Log

Well Designation:	MW-1	**Sampled By:**	
Site Address:	Gabreski Airport, Westhampton Beach, NY	**Project Manager:**	Tom Melia
Project Name:	Former Canine Kennel	**Project Number:**	SHD1602

Reference Elevation (ft):	24.91	**Well Use:**	Monitoring/Observation
Depth to Product (ft):	NP	**Product Elevation (ft):**	NA
Depth to Water (ft):	14.93	**Groundwater Elevation (ft):**	9.98
Depth to Bottom (ft):	20.00	**Bottom Elevation (ft):**	4.91
Height of Water Column (ft):	5.07	**Well Diameter (in):**	2
Standing Water Volume (gal):	1.01	**Calculated Purge Volume (gal):**	3.04
Sample Date:		**Begin Purge Time:**	
Sample Time:		**Complete Purge Time:**	
Purge Method:	Perry Pump	**Sample Method:**	Perry Pump
Purge Rate (gpm):		**Purge Time (min):**	
Actual Purge Volume (gal):		**Casing Volumes Removed:**	
Sample Appearance:		**Odors Observed:**	
Analytical Laboratory:	York	**Notes:**	DUPE082218
Date Shipped:			
PID (ppm):			
Analyses Requested:			
PCB (8082), PFAS, Dioxane			

Field Indicator Parameters

Reading	Time	Temp. (°C)	pH	Cond. (µS/cm)	ORP	DO	Turb. NTU		
1	9:50	19.30	6.31	0.117	-6	12.28	102		
2	9:53	18.36	6.28	0.111	-19	9.33	14.5		
3	9:56	18.17	6.24	0.109	-26	8.6	1.5		
4	9:59	18.25	6.21	0.107	-25	8.32	0		
5	10:02	18.63	6.17	0.105	-23	9.13	0		
6	10:05	18.71	6.16	0.103	-22	8.86	0		
7	10:08	18.95	6.13	0.102	-19	8.54	0		
8	10:11	18.78	6.11	0.102	-16	8.5	0		
9	10:14	18.68	6.1	0.102	-14	8.46	0		
10	10:17	18.72	6.09	0.102	-12	8.45	0		

P.W. GROSSER CONSULTING, Inc

Well Sampling Log

Well Designation:	MW-2	**Sampled By:**	
Site Address:	Gabreski Airport, Westhampton Beach, NY	**Project Manager:**	Tom Melia
Project Name:	Former Canine Kennel	**Project Number:**	SHD1602

Reference Elevation (ft):	26.75	**Well Use:**	Monitoring/Observation
Depth to Product (ft):	NP	**Product Elevation (ft):**	NA
Depth to Water (ft):	17.33	**Groundwater Elevation (ft):**	9.42
Depth to Bottom (ft):	20.00	**Bottom Elevation (ft):**	6.75
Height of Water Column (ft):	2.67	**Well Diameter (in):**	2
Standing Water Volume (gal):	0.53	**Calculated Purge Volume (gal):**	1.60
Sample Date:		**Begin Purge Time:**	
Sample Time:		**Complete Purge Time:**	
Purge Method:	Perry Pump	**Sample Method:**	Perry Pump
Purge Rate (gpm):		**Purge Time (min):**	
Actual Purge Volume (gal):		**Casing Volumes Removed:**	
Sample Appearance:		**Odors Observed:**	
Analytical Laboratory:	York	**Notes:**	
Date Shipped:			
PID (ppm):			
Analyses Requested:			
PCB (8082), PFAS, Dioxane			

Field Indicator Parameters

Reading	Time	Temp. (°C)	pH	Cond. (µS/cm)	ORP	DO	Turb. NTU		
1	13:35	21.94	6.09	0.133	-52	4.5	3802		
2	13:38	21.74	6.13	0.136	-55	4.59	20.5		
3	13:41	21.35	6.11	0.139	-59	3.49	28.2		
4	13:44	21.17	6.09	0.141	-56	3.77	14.9		
5	13:47	21.04	6.09	0.142	-56	4.32	14.7		
6	13:50	21.00	6.1	0.142	-56	3.76	11.9		

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Well Sampling Log

Well Designation:	MW-3	**Sampled By:**	
Site Address:	Gabreski Airport, Westhampton Beach, NY	**Project Manager:**	Tom Melia
Project Name:	Former Canine Kennel	**Project Number:**	SHD1602

Reference Elevation (ft):	23.97	**Well Use:**	Monitoring/Observation
Depth to Product (ft):	NP	**Product Elevation (ft):**	NA
Depth to Water (ft):	NM	**Groundwater Elevation (ft):**	NM
Depth to Bottom (ft):	NM	**Bottom Elevation (ft):**	NM
Height of Water Column (ft):	NM	**Well Diameter (in):**	2
Standing Water Volume (gal):	NM	**Calculated Purge Volume (gal):**	
Sample Date:		**Begin Purge Time:**	
Sample Time:		**Complete Purge Time:**	
Purge Method:	Perry Pump	**Sample Method:**	Perry Pump
Purge Rate (gpm):		**Purge Time (min):**	
Actual Purge Volume (gal):		**Casing Volumes Removed:**	
Sample Appearance:		**Odors Observed:**	
Analytical Laboratory:	York	**Notes:**	
Date Shipped:			
PID (ppm):			
Analyses Requested:			
PCB (8082), PFAS, Dioxane			

Field Indicator Parameters

Reading	Time	Temp. (°C)	pH	Cond. (µS/cm)	ORP	DO	Turb. NTU		
1	13:05	21.01	6.58	0.055	107	6.95	210		
2	13:08	20.80	6.37	0.062	111	8.25	159		
3	13:11	20.58	6.31	0.063	115	6.69	66.7		
4	13:14	20.51	6.3	0.063	118	6.54	26.7		
5	13:17	20.54	6.27	0.064	121	6.52	21.1		
6	13:20	20.51	6.27	0.064	122	6.5	16.6		
7	13:23	20.53	6.27	0.064	123	6.47	19.1		

P.W. GROSSER CONSULTING, Inc

Well Sampling Log

Well Designation:	MW-4	**Sampled By:**	
Site Address:	Gabreski Airport, Westhampton Beach, NY	**Project Manager:**	Tom Melia
Project Name:	Former Canine Kennel	**Project Number:**	SHD1602

Reference Elevation (ft):	24.16	**Well Use:**	Monitoring/Observation
Depth to Product (ft):	NP	**Product Elevation (ft):**	NA
Depth to Water (ft):	14.74	**Groundwater Elevation (ft):**	9.42
Depth to Bottom (ft):	20.00	**Bottom Elevation (ft):**	4.16
Height of Water Column (ft):	5.26	**Well Diameter (in):**	2
Standing Water Volume (gal):	1.05	**Calculated Purge Volume (gal):**	3.16
Sample Date:		**Begin Purge Time:**	
Sample Time:		**Complete Purge Time:**	
Purge Method:	Perry Pump	**Sample Method:**	Perry Pump
Purge Rate (gpm):		**Purge Time (min):**	#DIV/0!
Actual Purge Volume (gal):		**Casing Volumes Removed:**	
Sample Appearance:		**Odors Observed:**	
Analytical Laboratory:	York	**Notes:**	
Date Shipped:			
PID (ppm):			
Analyses Requested:			
PCB (8082), PFAS, Dioxane			

Field Indicator Parameters

Reading	Time	Temp. (°C)	pH	Cond. (µS/cm)	ORP	DO	Turb. NTU		
1	12:35	17.66	6.08	0.213	109	18.31	209		
2	12:38	16.68	6.12	0.224	118	9.89	118		
3	12:41	16.32	6.12	0.222	121	9.39	31.5		
4	12:44	16.43	6.1	0.222	125	9.07	22.6		
5	12:47	16.45	6.1	0.222	128	8.92	18.5		
6	12:50	16.55	6.09	0.222	130	8.79	9.4		
7	12:53	16.55	6.1	0.222	130	8.74	10.6		

P.W. GROSSER CONSULTING, Inc

Well Sampling Log

Well Designation:	MW-5	**Sampled By:**	
Site Address:	Gabreski Airport, Westhampton Beach, NY	**Project Manager:**	Tom Melia
Project Name:	Former Canine Kennel	**Project Number:**	SHD1602

Reference Elevation (ft):	22.50	**Well Use:**	Monitoring/Observation
Depth to Product (ft):	NP	**Product Elevation (ft):**	NA
Depth to Water (ft):	13.02	**Groundwater Elevation (ft):**	9.48
Depth to Bottom (ft):	20.00	**Bottom Elevation (ft):**	2.50
Height of Water Column (ft):	6.98	**Well Diameter (in):**	2
Standing Water Volume (gal):	1.40	**Calculated Purge Volume (gal):**	4.19
Sample Date:		**Begin Purge Time:**	
Sample Time:		**Complete Purge Time:**	
Purge Method:	Perry Pump	**Sample Method:**	Perry Pump
Purge Rate (gpm):		**Purge Time (min):**	
Actual Purge Volume (gal):		**Casing Volumes Removed:**	
Sample Appearance:		**Odors Observed:**	
Analytical Laboratory:	York	**Notes:**	
Date Shipped:			
PID (ppm):			
Analyses Requested:			
PCB (8082), PFAS, Dioxane			

Field Indicator Parameters

Reading	Time	Temp. (°C)	pH	Cond. (µS/cm)	ORP	DO	NTU		
1	12:00	16.70	6.07	0.2	98	15.4	0		
2	12:03	15.68	5.99	0.192	118	15.66	368		
3	12:06	16.23	5.91	0.187	127	8.9	108		
4	12:09	16.08	5.87	0.193	131	8.72	61.5		
5	12:12	16.13	5.86	0.177	135	8.56	17		
6	12:15	16.05	5.84	0.179	136	8.48	14.3		
7	12:18	16.06	5.85	0.178	136	8.49	13.2		
8	12:21	16.05	5.84	0.178	137	8.49	11.2		

P.W. GROSSER CONSULTING, Inc

Well Sampling Log

Well Designation:	MW-6	**Sampled By:**	
Site Address:	Gabreski Airport, Westhampton Beach, NY	**Project Manager:**	Tom Melia
Project Name:	Former Canine Kennel	**Project Number:**	SHD1602

Reference Elevation (ft):	22.03	**Well Use:**	Monitoring/Observation
Depth to Product (ft):	NP	**Product Elevation (ft):**	NA
Depth to Water (ft):	12.52	**Groundwater Elevation (ft):**	9.51
Depth to Bottom (ft):	20.00	**Bottom Elevation (ft):**	2.03
Height of Water Column (ft):	7.48	**Well Diameter (in):**	2
Standing Water Volume (gal):	1.50	**Calculated Purge Volume (gal):**	4.49
Sample Date:		**Begin Purge Time:**	
Sample Time:		**Complete Purge Time:**	
Purge Method:	Perry Pump	**Sample Method:**	Perry Pump
Purge Rate (gpm):		**Purge Time (min):**	
Actual Purge Volume (gal):		**Casing Volumes Removed:**	
Sample Appearance:		**Odors Observed:**	
Analytical Laboratory:	York	**Notes:**	
Date Shipped:			
PID (ppm):			
Analyses Requested:			
PCB (8082), PFAS, Dioxane			

Field Indicator Parameters

Reading	Time	Temp. (°C)	pH	Cond. (µS/cm)	ORP	DO	Turb. NTU		
1	11:00	16.41	5.8	0.15	69	10.78	424		
2	11:03	15.99	5.72	0.139	97	9.8	73.1		
3	11:06	15.93	5.63	0.134	111	11.03	12.5		
4	11:09	16.07	5.54	0.132	120	10.72	6.9		
5	11:12	17.16	5.49	0.133	132	9.98	3.5		
6	11:15	17.13	5.49	0.132	133	9.97	3.6		
7	11:18	16.72	5.48	0.132	138	10.15	4.4		
8	11:21	16.95	5.48	0.132	136	10.11	4.9		

APPENDIX B
LABORATORY ANALYTICAL REPORTS

Technical Report

prepared for:

P.W. Grosser Consulting
630 Johnson Avenue, Suite 7
Bohemia NY, 11716
Attention: Thomas Melia

Report Date: 09/13/2018
Client Project ID: SHD1602
York Project (SDG) No.: 18H1089

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 09/13/2018
Client Project ID: SHD1602
York Project (SDG) No.: 18H1089

P.W. Grosser Consulting
630 Johnson Avenue, Suite 7
Bohemia NY, 11716
Attention: Thomas Melia

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on August 23, 2018 and listed below. The project was identified as your project: **SHD1602**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
18H1089-01	MW-4	Water	08/22/2018	08/23/2018
18H1089-02	MW-5	Water	08/22/2018	08/23/2018
18H1089-03	MW-6	Water	08/22/2018	08/23/2018
18H1089-04	MW-3 MS/MSD	Water	08/22/2018	08/23/2018
18H1089-05	MW-2	Water	08/22/2018	08/23/2018
18H1089-06	MW-1	Water	08/22/2018	08/23/2018
18H1089-07	DUPE082218	Water	08/22/2018	08/23/2018
18H1089-08	Field Blank	Water	08/23/2018	08/23/2018
18H1089-09	Equipment Blank	Water	08/23/2018	08/23/2018

General Notes for York Project (SDG) No.: 18H1089

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 09/13/2018

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: MW-4 **York Sample ID:** 18H1089-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 12:55 pm	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
11097-69-1	**Aroclor 1254**	**0.550**		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14 NELAC-NY10854,CTDOH,NJDEP,PADEP	08/29/2018 22:48	LAB
1336-36-3	*** Total PCBs**	**0.550**		ug/L	0.0667	1	EPA 8082A Certifications:	08/28/2018 08:14	08/29/2018 22:48	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*56.4 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*67.2 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 12:55		

1,4-Dioxane, 8270D SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 12:55		

Sample Information

Client Sample ID: MW-5 **York Sample ID:** 18H1089-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 12:22 pm	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:12	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0606	1	EPA 8082A Certifications:	08/28/2018 08:14	08/29/2018 23:12	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*57.9 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*73.6 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 12:22		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 12:22		

Sample Information

Client Sample ID: MW-6 **York Sample ID:** 18H1089-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 11:35 am	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/29/2018 23:36	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0606	1	EPA 8082A Certifications:	08/28/2018 08:14	08/29/2018 23:36	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*67.3 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*77.6 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 11:35		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 11:35		

Sample Information

Client Sample ID: MW-3 MS/MSD **York Sample ID:** 18H1089-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 1:25 pm	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
11097-69-1	**Aroclor 1254**	**0.516**		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:00	LAB
1336-36-3	*** Total PCBs**	**0.516**		ug/L	0.0606	1	EPA 8082A Certifications:	08/28/2018 08:14	08/30/2018 00:00	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*55.9 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*79.6 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 13:25		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 13:25		

Sample Information

Client Sample ID: MW-2 **York Sample ID:** 18H1089-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 1:55 pm	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0606	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:24	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0606	1	EPA 8082A Certifications:	08/28/2018 08:14	08/30/2018 00:24	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*73.3 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*71.1 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 13:55		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 13:55		

Sample Information

Client Sample ID: MW-1 **York Sample ID:** 18H1089-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 10:20 am	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 00:48	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0588	1	EPA 8082A Certifications:	08/28/2018 08:14	08/30/2018 00:48	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*68.3 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*73.1 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 10:20		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 10:20		

Sample Information

Client Sample ID: DUPE082218 **York Sample ID:** 18H1089-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 22, 2018 12:00 am	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0588	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:12	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0588	1	EPA 8082A Certifications:	08/28/2018 08:14	08/30/2018 01:12	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*44.6 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*75.1 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/22/2018 00:00		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/22/2018 00:00		

Sample Information

Client Sample ID: **Field Blank** **York Sample ID:** **18H1089-08**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 23, 2018 12:18 pm	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 01:36	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0571	1	EPA 8082A Certifications:	08/28/2018 08:14	08/30/2018 01:36	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*62.4 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*85.6 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/23/2018 12:18		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/23/2018 12:18		

Sample Information

Client Sample ID: **Equipment Blank** **York Sample ID:** **18H1089-09**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18H1089	SHD1602	Water	August 23, 2018 12:20 pm	08/23/2018

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
11104-28-2	Aroclor 1221	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
11141-16-5	Aroclor 1232	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
53469-21-9	Aroclor 1242	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
12672-29-6	Aroclor 1248	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
11097-69-1	Aroclor 1254	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
11096-82-5	Aroclor 1260	ND		ug/L	0.0571	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	08/28/2018 08:14	08/30/2018 02:00	LAB
1336-36-3	* Total PCBs	ND		ug/L	0.0571	1	EPA 8082A Certifications:	08/28/2018 08:14	08/30/2018 02:00	LAB

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*66.8 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*82.1 %*	*30-120*

Analyzed by: Con-Test Analytical Laboratory

PFAS in Water by EPA 537

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 537m Certifications:	08/23/2018 12:20		

1,4-Dioxane, 8270D SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
		See Attached		See Attached	See Attach	1	EPA 8270D SIM Certifications:	08/23/2018 12:20		

Analytical Batch Summary

Batch ID: '[none]' **Preparation Method:** Analysis Preparation **Prepared By:**

YORK Sample ID	Client Sample ID	Preparation Date
18H1089-01	MW-4	08/22/18
18H1089-01	MW-4	08/22/18
18H1089-02	MW-5	08/22/18
18H1089-02	MW-5	08/22/18
18H1089-03	MW-6	08/22/18
18H1089-03	MW-6	08/22/18
18H1089-04	MW-3 MS/MSD	08/22/18
18H1089-04	MW-3 MS/MSD	08/22/18
18H1089-05	MW-2	08/22/18
18H1089-05	MW-2	08/22/18
18H1089-06	MW-1	08/22/18
18H1089-06	MW-1	08/22/18
18H1089-07	DUPE082218	08/22/18
18H1089-07	DUPE082218	08/22/18
18H1089-08	Field Blank	08/23/18
18H1089-08	Field Blank	08/23/18
18H1089-09	Equipment Blank	08/23/18
18H1089-09	Equipment Blank	08/23/18
BATCH-BLK1 (Water)	BLK	
BATCH-BS1 (Water)	BS	
BATCH-DUP1 (Water)	DUP	
BATCH-MS1 (Water)	MS	

Batch ID: BH81380 **Preparation Method:** EPA SW846-3510C Low Level **Prepared By:** TMP

YORK Sample ID	Client Sample ID	Preparation Date
18H1089-01	MW-4	08/28/18
18H1089-02	MW-5	08/28/18
18H1089-03	MW-6	08/28/18
18H1089-04	MW-3 MS/MSD	08/28/18
18H1089-05	MW-2	08/28/18
18H1089-06	MW-1	08/28/18
18H1089-07	DUPE082218	08/28/18
18H1089-08	Field Blank	08/28/18
18H1089-09	Equipment Blank	08/28/18
BH81380-BLK2	Blank	08/28/18
BH81380-BS2	LCS	08/28/18

Polychlorinated Biphenyls by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH81380 - EPA SW846-3510C Low Level											
Blank (BH81380-BLK2)									Prepared: 08/28/2018 Analyzed: 08/29/2018		
Aroclor 1016	ND	0.0500	ug/L								
Aroclor 1221	ND	0.0500	"								
Aroclor 1232	ND	0.0500	"								
Aroclor 1242	ND	0.0500	"								
Aroclor 1248	ND	0.0500	"								
Aroclor 1254	ND	0.0500	"								
Aroclor 1260	ND	0.0500	"								
Total PCBs	ND	0.0500	"								
Surrogate: Tetrachloro-m-xylene	*0.186*		*"*	*0.202*		*92.1*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.159*		*"*	*0.201*		*79.1*	*30-120*				
LCS (BH81380-BS2)									Prepared: 08/28/2018 Analyzed: 08/29/2018		
Aroclor 1016	0.995	0.0500	ug/L	1.00		99.5	40-120				
Aroclor 1260	0.982	0.0500	"	1.00		98.2	40-120				
Surrogate: Tetrachloro-m-xylene	*0.185*		*"*	*0.202*		*91.6*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.161*		*"*	*0.201*		*80.1*	*30-120*				

Sample and Data Qualifiers Relating to This Work Order

See Attach See Attached

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 18H1089

Page 1 of 1

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: PWGC	Company: PWGC	Company: PWGC	3HD1602	RUSH - Next Day
Address: 630 Johnson Avenue, Bohemia NY	Address: 630 Johnson Avenue, Bohemia NY	Address: 630 Johnson Avenue, Bohemia NY	YOUR Project Name: Canine Kennel	RUSH - Two Day
Phone: 631-589-6353	Phone: 631-589-6353	Phone: 631 589-6353		RUSH - Three Day
Contact: Tom Melia	Contact: Tom Melia	Contact: Tom Melia		RUSH - Four Day
E-mail: ~~tmelia~~thomasm@pwgrasser.com	E-mail: thomasm@pwgrasser.com	E-mail: thomasm@pwgrasser.com	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)

Matrix Codes	Samples From		Report / EDD Type (circle selections)			YORK Reg. Comp.
S - soil / solid	New York	X	Summary Report	CT RCP	Standard Excel EDD	Compared to the following Regulation(s): (please fill in)
GW - groundwater	New Jersey		QA Report	CT RCP DQA/DUE	EQuIS (Standard)	
DW - drinking water	Connecticut		NY ASP A Package	NJDEP Reduced Deliverables	NYSDEC EQuIS	
WW - wastewater	Pennsylvania		NY ASP B Package		NJDEP SRP HazSite	
O - Oil ; Other	Other			NJDKQP	Other:	

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
MW-4	W	1255 8-22-18	1,4 Dioxane, PCB, PFC list	6
MW-5	W	1222	1,4 Dioxane, PCB, PFC list	6
MW-6	W	1135	1,4 Dioxane, PCB, PFC list	6
MW-3 /MS/MSD	W	1325	1,4 Dioxane, PCB, PFC list	~~10~~ 12
MW-2	W	1355	1,4 Dioxane, PCB, PFC list	6
MW-1	W	1020	1,4 Dioxane, PCB, PFC list	6
DUPE082218	W	**	1,4 Dioxane, PCB, PFC list	6
Field Blank	W	1218 8-23-18	1,4 Dioxane, PCB, PFC list	
Equipment Blank	W	1220 8-23-18	1,4 Dioxane, PCB, PFC list	

Comments:

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
[signature]	8/22/18 1600	[signature]	8/22/18 1220	[signature]	8/23/18 1917
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time / Temp. Received at Lab
				TC [signature]	8/22/18 1917 / 3.7 Degrees C

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 13, 2018

Richard August
York Analytical Labs
120 Research Drive
Stratford, CT 06615

Project Location: NY
Client Job Number:
Project Number: 18H1089
Laboratory Work Order Number: 18H1250

Enclosed are results of analyses for samples received by the laboratory on August 24, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kerry K. McGee
Project Manager

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York Analytical Labs
120 Research Drive
Stratford, CT 06615
ATTN: Richard August

REPORT DATE: 9/13/2018

PURCHASE ORDER NUMBER: 19370

PROJECT NUMBER: 18H1089

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18H1250

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
18H1089-01	18H1250-01	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-02	18H1250-02	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-03	18H1250-03	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-04	18H1250-04	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-05	18H1250-05	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-06	18H1250-06	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-07	18H1250-07	Water		SOP 434-PFAAS SW-846 8270D	
18H1089-08	18H1250-08	Field Blank		SOP 434-PFAAS SW-846 8270D	
18H1089-09	18H1250-09	Water		SOP 434-PFAAS SW-846 8270D	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

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SOP 434-PFAAS

Qualifications:

MS-07A

Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Perfluorobutanoic acid (PFBA)
B211452-MS1, B211452-MSD1

Perfluorooctanesulfonamide (FOS/
B211452-MS1, B211452-MSD1

MS-12

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonate (6:2 FT
B211452-MS1, B211452-MSD1

MS-22

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

NEtFOSAA
B211452-MSD1

Perfluorotetradecanoic acid (PFTA
B211452-MSD1

R-06

Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.

Analyte & Samples(s) Qualified:

Perfluorodecanesulfonic acid (PFD
B211452-MSD1

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

13C-PFDA
18H1250-02RE1[18H1089-02], 18H1250-06RE1[18H1089-06], 18H1250-06RE2[18H1089-06], 18H1250-07RE1[18H1089-07], 18H1250-07RE2[18H1089-07]

13C-PFHxA
18H1250-02RE1[18H1089-02], 18H1250-06RE1[18H1089-06], 18H1250-06RE2[18H1089-06], 18H1250-07RE1[18H1089-07], 18H1250-07RE2[18H1089-07]

d5-NEtFOSAA
18H1250-02RE1[18H1089-02], 18H1250-06RE1[18H1089-06], 18H1250-06RE2[18H1089-06], 18H1250-07RE1[18H1089-07], 18H1250-07RE2[18H1089-07]

V-17

Internal standard area <50% of associated calibration standard internal standard area. Reanalysis yielded similar internal standard non-conformance.

Analyte & Samples(s) Qualified:

13C-PFOS
18H1250-06[18H1089-06], 18H1250-07[18H1089-07]

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonate (6:2 FT
S027157-CCV1, S027163-CCV2

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The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-01 | Sampled: 8/22/2018 12:55

Sample ID: 18H1250-01

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.23	µg/L	1		SW-846 8270D	8/26/18	8/29/18 12:56	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	28.1	15-110		8/29/18 12:56

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-01 | Sampled: 8/22/2018 12:55

Sample ID: 18H1250-01

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorohexanoic acid (PFHxA)	4.9	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluoroheptanoic acid (PFHpA)	2.3	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluoropentanoic acid (PFPeA)	2.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorohexanesulfonic acid (PFHxS)	12	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorooctanoic acid (PFOA)	7.4	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorooctanesulfonic acid (PFOS)	57	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:23	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	91.7	70-130		9/6/18 19:23
13C-PFDA	84.5	70-130		9/6/18 19:23
d5-NEtFOSAA	73.8	70-130		9/6/18 19:23

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-02 | Sampled: 8/22/2018 12:22

Sample ID: 18H1250-02

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.23	µg/L	1		SW-846 8270D	8/26/18	8/29/18 13:18	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	32.9	15-110		8/29/18 13:18

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-02 | Sampled: 8/22/2018 12:22

Sample ID: 18H1250-02

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	4.4	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorohexanoic acid (PFHxA)	78	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluoroheptanoic acid (PFHpA)	6.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorobutanoic acid (PFBA)	4.7	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluoroheptanesulfonic acid (PFHpS)	5.7	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluoropentanoic acid (PFPeA)	17	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	2.4	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorohexanesulfonic acid (PFHxS)	540	20	ng/L	10		SOP 434-PFAAS	9/1/18	9/12/18 12:26	KAF
Perfluorooctanoic acid (PFOA)	17	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorooctanesulfonic acid (PFOS)	1600	20	ng/L	10		SOP 434-PFAAS	9/1/18	9/12/18 12:26	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:36	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	88.1	70-130		9/6/18 19:36
13C-PFHxA	*	70-130	S-01	9/12/18 12:26
13C-PFDA	87.6	70-130		9/6/18 19:36
13C-PFDA	*	70-130	S-01	9/12/18 12:26
d5-NEtFOSAA	85.1	70-130		9/6/18 19:36
d5-NEtFOSAA	*	70-130	S-01	9/12/18 12:26

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-03 | Sampled: 8/22/2018 11:35

Sample ID: 18H1250-03

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.23	µg/L	1		SW-846 8270D	8/26/18	8/29/18 13:40	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	28.4	15-110		8/29/18 13:40

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-03 | Sampled: 8/22/2018 11:35

Sample ID: 18H1250-03

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	5.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorobutanesulfonic acid (PFBS)	4.1	4.0	ng/L	2		SOP 434-PFAAS	9/1/18	9/12/18 12:38	KAF
Perfluorohexanoic acid (PFHxA)	12	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluoroheptanoic acid (PFHpA)	5.3	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluoroheptanesulfonic acid (PFHpS)	2.4	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluoropentanoic acid (PFPeA)	5.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorohexanesulfonic acid (PFHxS)	190	4.0	ng/L	2		SOP 434-PFAAS	9/1/18	9/12/18 12:38	KAF
Perfluorooctanoic acid (PFOA)	7.5	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorooctanesulfonic acid (PFOS)	260	4.0	ng/L	2		SOP 434-PFAAS	9/1/18	9/12/18 12:38	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 19:49	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	89.6	70-130		9/6/18 19:49
13C-PFHxA	92.4	70-130		9/12/18 12:38
13C-PFDA	87.8	70-130		9/6/18 19:49
13C-PFDA	96.3	70-130		9/12/18 12:38
d5-NEtFOSAA	83.1	70-130		9/6/18 19:49
d5-NEtFOSAA	80.5	70-130		9/12/18 12:38

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-04 | Sampled: 8/22/2018 13:25

Sample ID: 18H1250-04

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.23	µg/L	1		SW-846 8270D	8/26/18	8/29/18 14:02	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	29.3	15-110		8/29/18 14:02

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-04 | Sampled: 8/22/2018 13:25

Sample ID: 18H1250-04

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorohexanoic acid (PFHxA)	8.8	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluoroheptanoic acid (PFHpA)	8.8	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorobutanoic acid (PFBA)	3.5	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluoropentanoic acid (PFPeA)	6.9	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorohexanesulfonic acid (PFHxS)	7.7	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorooctanoic acid (PFOA)	27	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorooctanesulfonic acid (PFOS)	8.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorodecanoic acid (PFDA)	2.9	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
NEtFOSAA	2.5	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:14	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	100	70-130		9/6/18 20:14
13C-PFDA	112	70-130		9/6/18 20:14
d5-NEtFOSAA	106	70-130		9/6/18 20:14

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-05 | Sampled: 8/22/2018 13:55

Sample ID: 18H1250-05

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.22	µg/L	1		SW-846 8270D	8/26/18	8/29/18 14:24	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	25.9	15-110		8/29/18 14:24

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-05 | Sampled: 8/22/2018 13:55

Sample ID: 18H1250-05

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorohexanoic acid (PFHxA)	11	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluoroheptanoic acid (PFHpA)	7.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorobutanoic acid (PFBA)	2.9	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluoropentanoic acid (PFPeA)	10	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorohexanesulfonic acid (PFHxS)	7.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorooctanoic acid (PFOA)	20	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorooctanesulfonic acid (PFOS)	20	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorononanoic acid (PFNA)	3.8	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:27	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
13C-PFHxA	86.6	70-130		9/6/18 20:27	
13C-PFDA	84.6	70-130		9/6/18 20:27	
d5-NEtFOSAA	84.6	70-130		9/6/18 20:27	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-06 | Sampled: 8/22/2018 10:20

Sample ID: 18H1250-06

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.22	µg/L	1		SW-846 8270D	8/26/18	8/29/18 14:46	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	26.6	15-110		8/29/18 14:46

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-06 | Sampled: 8/22/2018 10:20

Sample ID: 18H1250-06

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	44	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorohexanoic acid (PFHxA)	910	20	ng/L	10		SOP 434-PFAAS	9/1/18	9/12/18 12:51	KAF
Perfluoroheptanoic acid (PFHpA)	63	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorobutanoic acid (PFBA)	21	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluoroheptanesulfonic acid (PFHpS)	160	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluoropentanoic acid (PFPeA)	210	20	ng/L	10		SOP 434-PFAAS	9/1/18	9/12/18 12:51	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	4.1	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorohexanesulfonic acid (PFHxS)	4300	200	ng/L	100		SOP 434-PFAAS	9/1/18	9/12/18 13:04	KAF
Perfluorooctanoic acid (PFOA)	150	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorooctanesulfonic acid (PFOS)	17000	200	ng/L	100		SOP 434-PFAAS	9/1/18	9/12/18 13:04	KAF
Perfluorononanoic acid (PFNA)	4.1	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:40	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	83.3	70-130		9/6/18 20:40
13C-PFHxA	*	70-130	S-01	9/12/18 12:51
13C-PFHxA	*	70-130	S-01	9/12/18 13:04
13C-PFDA	81.0	70-130		9/6/18 20:40
13C-PFDA	*	70-130	S-01	9/12/18 12:51
13C-PFDA	*	70-130	S-01	9/12/18 13:04
d5-NEtFOSAA	76.2	70-130		9/6/18 20:40
d5-NEtFOSAA	*	70-130	S-01	9/12/18 12:51
d5-NEtFOSAA	*	70-130	S-01	9/12/18 13:04

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-07 | Sampled: 8/22/2018 00:00

Sample ID: 18H1250-07

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.21	µg/L	1		SW-846 8270D	8/26/18	8/29/18 15:07	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	24.8	15-110		8/29/18 15:07

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-07 | Sampled: 8/22/2018 00:00

Sample ID: 18H1250-07

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	48	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorohexanoic acid (PFHxA)	890	20	ng/L	10		SOP 434-PFAAS	9/1/18	9/12/18 13:16	KAF
Perfluoroheptanoic acid (PFHpA)	73	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorobutanoic acid (PFBA)	23	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluoroheptanesulfonic acid (PFHpS)	170	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluoropentanoic acid (PFPeA)	220	20	ng/L	10		SOP 434-PFAAS	9/1/18	9/12/18 13:16	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	7.7	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorohexanesulfonic acid (PFHxS)	4300	200	ng/L	100		SOP 434-PFAAS	9/1/18	9/12/18 13:29	KAF
Perfluorooctanoic acid (PFOA)	170	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorooctanesulfonic acid (PFOS)	18000	200	ng/L	100		SOP 434-PFAAS	9/1/18	9/12/18 13:29	KAF
Perfluorononanoic acid (PFNA)	4.9	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 20:52	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	91.1	70-130		9/6/18 20:52
13C-PFHxA	*	70-130	S-01	9/12/18 13:16
13C-PFHxA	*	70-130	S-01	9/12/18 13:29
13C-PFDA	96.7	70-130		9/6/18 20:52
13C-PFDA	*	70-130	S-01	9/12/18 13:16
13C-PFDA	*	70-130	S-01	9/12/18 13:29
d5-NEtFOSAA	82.0	70-130		9/6/18 20:52
d5-NEtFOSAA	*	70-130	S-01	9/12/18 13:16
d5-NEtFOSAA	*	70-130	S-01	9/12/18 13:29

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-08 | Sampled: 8/22/2018 12:18

Sample ID: 18H1250-08

Sample Matrix: Field Blank

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	µg/L	1		SW-846 8270D	8/26/18	8/29/18 15:30	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	25.6	15-110		8/29/18 15:30

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Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-08 | Sampled: 8/22/2018 12:18

Sample ID: 18H1250-08

Sample Matrix: Field Blank

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	2.7	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorohexanesulfonic acid (PFHxS)	3.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorooctanesulfonic acid (PFOS)	11	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:05	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
13C-PFHxA	93.5	70-130		9/6/18 21:05	
13C-PFDA	102	70-130		9/6/18 21:05	
d5-NEtFOSAA	86.5	70-130		9/6/18 21:05	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-09 | Sampled: 8/22/2018 12:20

Sample ID: 18H1250-09

Sample Matrix: Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.22	µg/L	1		SW-846 8270D	8/26/18	8/29/18 15:52	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	26.3	15-110		8/29/18 15:52

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NY | Sample Description: | Work Order: 18H1250

Date Received: 8/24/2018

Field Sample #: 18H1089-09 | Sampled: 8/22/2018 12:20

Sample ID: 18H1250-09

Sample Matrix: Water

Miscellaneous Organic Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorohexanesulfonic acid (PFHxS)	3.2	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorooctanesulfonic acid (PFOS)	11	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	9/1/18	9/6/18 21:18	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	93.1	70-130		9/6/18 21:18
13C-PFDA	93.7	70-130		9/6/18 21:18
d5-NEtFOSAA	77.3	70-130		9/6/18 21:18

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Sample Extraction Data

Prep Method: EPA 537-SOP 434-PFAAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18H1250-01 [18H1089-01]	B211452	250	1.00	09/01/18
18H1250-02 [18H1089-02]	B211452	250	1.00	09/01/18
18H1250-02RE1 [18H1089-02]	B211452	250	1.00	09/01/18
18H1250-03 [18H1089-03]	B211452	250	1.00	09/01/18
18H1250-03RE1 [18H1089-03]	B211452	250	1.00	09/01/18
18H1250-04 [18H1089-04]	B211452	250	1.00	09/01/18
18H1250-05 [18H1089-05]	B211452	250	1.00	09/01/18
18H1250-06 [18H1089-06]	B211452	250	1.00	09/01/18
18H1250-06RE1 [18H1089-06]	B211452	250	1.00	09/01/18
18H1250-06RE2 [18H1089-06]	B211452	250	1.00	09/01/18
18H1250-07 [18H1089-07]	B211452	250	1.00	09/01/18
18H1250-07RE1 [18H1089-07]	B211452	250	1.00	09/01/18
18H1250-07RE2 [18H1089-07]	B211452	250	1.00	09/01/18
18H1250-08 [18H1089-08]	B211452	250	1.00	09/01/18
18H1250-09 [18H1089-09]	B211452	250	1.00	09/01/18

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18H1250-01 [18H1089-01]	B211150	880	1.00	08/26/18
18H1250-02 [18H1089-02]	B211150	880	1.00	08/26/18
18H1250-03 [18H1089-03]	B211150	860	1.00	08/26/18
18H1250-04 [18H1089-04]	B211150	880	1.00	08/26/18
18H1250-05 [18H1089-05]	B211150	890	1.00	08/26/18
18H1250-06 [18H1089-06]	B211150	890	1.00	08/26/18
18H1250-07 [18H1089-07]	B211150	950	1.00	08/26/18
18H1250-08 [18H1089-08]	B211150	1000	1.00	08/26/18
18H1250-09 [18H1089-09]	B211150	900	1.00	08/26/18

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QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B211150 - SW-846 3510C										
Blank (B211150-BLK1)				Prepared: 08/26/18 Analyzed: 08/29/18						
1,4-Dioxane	ND	0.20	µg/L							
Surrogate: 1,4-Dioxane-d8	*3.42*		µg/L	10.0		34.2	15-110			
LCS (B211150-BS1)				Prepared: 08/26/18 Analyzed: 08/29/18						
1,4-Dioxane	9.99	0.20	µg/L	10.0		99.9	40-140			
Surrogate: 1,4-Dioxane-d8	*3.18*		µg/L	10.0		31.8	15-110			
LCS Dup (B211150-BSD1)				Prepared: 08/26/18 Analyzed: 08/29/18						
1,4-Dioxane	11.7	0.20	µg/L	10.0		117	40-140	15.6	30	
Surrogate: 1,4-Dioxane-d8	*2.92*		µg/L	10.0		29.2	15-110			

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B211452 - EPA 537										
Blank (B211452-BLK1)				Prepared: 09/01/18 Analyzed: 09/06/18						
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L							
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
NMeFOSAA	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
NEtFOSAA	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Surrogate: 13C-PFHxA	*35.1*		ng/L	40.0		87.8	70-130			
Surrogate: 13C-PFDA	*39.3*		ng/L	40.0		98.4	70-130			
Surrogate: d5-NEtFOSAA	*152*		ng/L	160		95.1	70-130			
LCS (B211452-BS1)				Prepared: 09/01/18 Analyzed: 09/10/18						
Perfluorobutanesulfonic acid (PFBS)	19.3	2.0	ng/L	17.7		109	70-130			
Perfluorohexanoic acid (PFHxA)	20.3	2.0	ng/L	20.0		101	70-130			
Perfluoroheptanoic acid (PFHpA)	19.7	2.0	ng/L	20.0		98.5	70-130			
Perfluorobutanoic acid (PFBA)	6.02	2.0	ng/L	20.0		30.1	30-110			
Perfluorodecanesulfonic acid (PFDS)	19.9	2.0	ng/L	19.3		103	70-130			
Perfluoroheptanesulfonic acid (PFHpS)	20.6	2.0	ng/L	19.0		108	70-130			
Perfluorooctanesulfonamide (FOSA)	7.18	2.0	ng/L	20.0		35.9	30-110			
Perfluoropentanoic acid (PFPeA)	20.1	2.0	ng/L	20.0		101	70-130			
6:2 Fluorotelomersulfonate (6:2 FTS)	19.9	2.0	ng/L	19.0		105	70-130			
8:2 Fluorotelomersulfonate (8:2 FTS)	24.5	2.0	ng/L	19.2		128	70-130			
Perfluorohexanesulfonic acid (PFHxS)	22.0	2.0	ng/L	18.2		121	70-130			
Perfluorooctanoic acid (PFOA)	20.5	2.0	ng/L	20.0		102	70-130			
Perfluorooctanesulfonic acid (PFOS)	18.6	2.0	ng/L	18.5		100	70-130			
Perfluorononanoic acid (PFNA)	22.2	2.0	ng/L	20.0		111	70-130			
Perfluorodecanoic acid (PFDA)	21.0	2.0	ng/L	20.0		105	70-130			
NMeFOSAA	16.9	2.0	ng/L	20.0		84.7	70-130			
Perfluoroundecanoic acid (PFUnA)	21.2	2.0	ng/L	20.0		106	70-130			
NEtFOSAA	19.8	2.0	ng/L	20.0		98.8	70-130			
Perfluorododecanoic acid (PFDoA)	21.2	2.0	ng/L	20.0		106	70-130			
Perfluorotridecanoic acid (PFTrDA)	20.7	2.0	ng/L	20.0		104	70-130			
Perfluorotetradecanoic acid (PFTA)	18.7	2.0	ng/L	20.0		93.5	70-130			
Surrogate: 13C-PFHxA	*35.5*		ng/L	40.0		88.7	70-130			
Surrogate: 13C-PFDA	*34.3*		ng/L	40.0		85.6	70-130			
Surrogate: d5-NEtFOSAA	*138*		ng/L	160		86.2	70-130			

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QUALITY CONTROL

Miscellaneous Organic Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B211452 - EPA 537												
Matrix Spike (B211452-MS1)	**Source: 18H1250-04**			Prepared: 09/01/18 Analyzed: 09/06/18								
Perfluorobutanesulfonic acid (PFBS)	18.3	2.0	ng/L	17.7	ND	103		70-130				
Perfluorohexanoic acid (PFHxA)	25.9	2.0	ng/L	20.0	8.77	85.9		70-130				
Perfluoroheptanoic acid (PFHpA)	26.0	2.0	ng/L	20.0	8.77	85.9		70-130				
Perfluorobutanoic acid (PFBA)	6.57	2.0	ng/L	20.0	3.54	**15.1**	*	30-110				MS-07A
Perfluorodecanesulfonic acid (PFDS)	19.3	2.0	ng/L	19.3	ND	100		70-130				
Perfluoroheptanesulfonic acid (PFHpS)	16.5	2.0	ng/L	19.0	ND	87.1		70-130				
Perfluorooctanesulfonamide (FOSA)	3.73	2.0	ng/L	20.0	ND	**18.6**	*	30-110				MS-07A
Perfluoropentanoic acid (PFPeA)	22.4	2.0	ng/L	20.0	6.92	77.3		70-130				
6:2 Fluorotelomersulfonate (6:2 FTS)	30.1	2.0	ng/L	19.0	ND	**158**	*	70-130				MS-12
8:2 Fluorotelomersulfonate (8:2 FTS)	24.5	2.0	ng/L	19.2	ND	128		70-130				
Perfluorohexanesulfonic acid (PFHxS)	27.8	2.0	ng/L	18.2	7.70	111		70-130				
Perfluorooctanoic acid (PFOA)	48.5	2.0	ng/L	20.0	26.5	110		70-130				
Perfluorooctanesulfonic acid (PFOS)	26.1	2.0	ng/L	18.5	8.21	96.9		70-130				
Perfluorononanoic acid (PFNA)	16.6	2.0	ng/L	20.0	ND	82.8		70-130				
Perfluorodecanoic acid (PFDA)	20.9	2.0	ng/L	20.0	2.87	90.2		70-130				
NMeFOSAA	14.5	2.0	ng/L	20.0	ND	72.7		70-130				
Perfluoroundecanoic acid (PFUnA)	17.7	2.0	ng/L	20.0	ND	88.5		70-130				
NEtFOSAA	18.4	2.0	ng/L	20.0	2.46	79.6		70-130				
Perfluorododecanoic acid (PFDoA)	15.4	2.0	ng/L	20.0	ND	76.9		70-130				
Perfluorotridecanoic acid (PFTrDA)	16.9	2.0	ng/L	20.0	ND	84.7		70-130				
Perfluorotetradecanoic acid (PFTA)	16.3	2.0	ng/L	20.0	ND	81.3		70-130				
Surrogate: 13C-PFHxA	*33.6*		ng/L	40.0		83.9		70-130				
Surrogate: 13C-PFDA	*34.9*		ng/L	40.0		87.3		70-130				
Surrogate: d5-NEtFOSAA	*139*		ng/L	160		86.9		70-130				
Matrix Spike Dup (B211452-MSD1)	**Source: 18H1250-04**			Prepared: 09/01/18 Analyzed: 09/06/18								
Perfluorobutanesulfonic acid (PFBS)	16.5	2.0	ng/L	17.7	ND	93.0		70-130	10.4		30	
Perfluorohexanoic acid (PFHxA)	25.2	2.0	ng/L	20.0	8.77	82.0		70-130	3.00		30	
Perfluoroheptanoic acid (PFHpA)	26.6	2.0	ng/L	20.0	8.77	89.3		70-130	2.55		30	
Perfluorobutanoic acid (PFBA)	7.85	2.0	ng/L	20.0	3.54	**21.5**	*	30-110	17.7		30	MS-07A
Perfluorodecanesulfonic acid (PFDS)	13.7	2.0	ng/L	19.3	ND	70.8		70-130	**34.3**	*	30	R-06
Perfluoroheptanesulfonic acid (PFHpS)	16.2	2.0	ng/L	19.0	ND	85.2		70-130	2.12		30	
Perfluorooctanesulfonamide (FOSA)	4.12	2.0	ng/L	20.0	ND	**20.6**	*	30-110	10.0		30	MS-07A
Perfluoropentanoic acid (PFPeA)	25.1	2.0	ng/L	20.0	6.92	91.1		70-130	11.6		30	
6:2 Fluorotelomersulfonate (6:2 FTS)	29.1	2.0	ng/L	19.0	ND	**153**	*	70-130	3.35		30	MS-12
8:2 Fluorotelomersulfonate (8:2 FTS)	24.4	2.0	ng/L	19.2	ND	127		70-130	0.535		30	
Perfluorohexanesulfonic acid (PFHxS)	24.0	2.0	ng/L	18.2	7.70	89.7		70-130	14.7		30	
Perfluorooctanoic acid (PFOA)	48.4	2.0	ng/L	20.0	26.5	109		70-130	0.112		30	
Perfluorooctanesulfonic acid (PFOS)	23.2	2.0	ng/L	18.5	8.21	80.9		70-130	12.0		30	
Perfluorononanoic acid (PFNA)	18.7	2.0	ng/L	20.0	ND	93.7		70-130	12.3		30	
Perfluorodecanoic acid (PFDA)	20.4	2.0	ng/L	20.0	2.87	87.8		70-130	2.33		30	
NMeFOSAA	15.5	2.0	ng/L	20.0	ND	77.6		70-130	6.53		30	
Perfluoroundecanoic acid (PFUnA)	17.2	2.0	ng/L	20.0	ND	85.9		70-130	3.02		30	
NEtFOSAA	15.3	2.0	ng/L	20.0	2.46	**64.0**	*	70-130	18.6		30	MS-22
Perfluorododecanoic acid (PFDoA)	15.5	2.0	ng/L	20.0	ND	77.6		70-130	0.830		30	
Perfluorotridecanoic acid (PFTrDA)	15.3	2.0	ng/L	20.0	ND	76.3		70-130	10.5		30	
Perfluorotetradecanoic acid (PFTA)	13.3	2.0	ng/L	20.0	ND	**66.6**	*	70-130	19.9		30	MS-22
Surrogate: 13C-PFHxA	*34.7*		ng/L	40.0		86.8		70-130				
Surrogate: 13C-PFDA	*33.3*		ng/L	40.0		83.4		70-130				
Surrogate: d5-NEtFOSAA	*123*		ng/L	160		76.8		70-130				

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
MS-07A	Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.
MS-12	Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
R-06	Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-17	Internal standard area <50% of associated calibration standard internal standard area. Reanalysis yielded similar internal standard non-conformance.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270D in Water	
1,4-Dioxane	NY

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2018
NC	North Carolina Div. of Water Quality	652	12/31/2018
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2018
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

18H1250

YORK
Analytical Laboratories, Inc.

8/23/2018

SUBCONTRACT Notification, Purchase Order and Chain-of-Custody
York Project No.: 18H1089

This information is being sent to inform you that York intends to subcontract certain samples to another licensed laboratory for specific parameters that we cannot perform in-house. The specific paramters that will be subcontracted are detailed below. Do not contact the subcontract laboratory directly. Please contact the YORK project manager for further information.

Note: E-mail lab reports to: York_Lab_Report@yorklab.com **Mail/Fax Hard Copies to: York Analytical at the address below**

SENDING LABORATORY:

York Analytical Laboratories, Inc.
120 Research Drive
Stratford, CT 06615
Phone: 203.325.1371
Fax: 203.357.0166
Contact: **York Analytical**

RECEIVING LABORATORY:

Con-Test Analytical Laboratory
39 Spruce Street
East Long Meadow, MA 01028
Phone :(413) 525-2332
Fax: (413) 525-6405

Sample ID: 18H1089-01 **Matrix: Water** **Date Sampled : 08/22/2018 12:55**

1

Analysis Needed	Date Due	Holding Time Expires	Comments
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 12:55	ASP B and NYSDEC Equis required.
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 12:55	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

Sample ID: 18H1089-02 **Matrix: Water** **Date Sampled : 08/22/2018 12:22**

2

Analysis Needed	Date Due	Holding Time Expires	Comments
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 12:22	ASP B and NYSDEC Equis required.
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 12:22	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

York Purchase Order No.: 19370 Samples from State of: **NY**

Deliverables required: NYSDEC ASP B

EDDs required: NYSDEC Equis

Data Pkg DUE: 09/21/2018

Chain-of-Custody Information

Paul Grace	8/23/2018		8/24/18	8 AM
Released By York Sample Control	Date	Received By	Date	
	8/24/18		8/24/18	1634
Received By	Date	Received in Subcontract Lab By	Date	

6.6 15.3 13.7
HP

18H1250

YORK
Analytical Laboratories, Inc.

8/23/2018

SUBCONTRACT Notification, Purchase Order and Chain-of-Custody
York Project No.: 18H1089

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Note: E-mail lab reports to: York_Lab_Report@yorklab.com **Mail/Fax Hard Copies to: York Analytical at the address below**

Sample ID: 18H1089-03 **Matrix: Water** **Date Sampled : 08/22/2018 11:35**

3

Analysis Needed	Date Due	Holding Time Expires	Comments
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 11:35	ASP B and NYSDEC Equis required.
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 11:35	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

Sample ID: 18H1089-04 **Matrix: Water** **Date Sampled : 08/22/2018 13:25**

4

Analysis Needed	Date Due	Holding Time Expires	Comments
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 13:25	ASP B and NYSDEC Equis required.
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 13:25	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F) 07_1000mL Amber Glass Cool to 4° C (I) 07_1000mL Amber Glass Cool to 4° C (J)
10_250mL Square Plastic Cool to 4° C (K) 10_250mL Square Plastic Cool to 4° C (L) 07_1000mL Amber Glass Cool to 4° C (O)
07_1000mL Amber Glass Cool to 4° C (P) 10_250mL Square Plastic Cool to 4° C (Q) 10_250mL Square Plastic Cool to 4° C (R)

York Purchase Order No.: 19370

Samples from State of: NY

Deliverables required: NYSDEC ASP B

EDDs required: NYSDEC Equis

Data Pkg DUE: 09/21/2018

Chain-of-Custody Information

Paul Grace 8/23/2018 — Released By York Sample Control / Date

Received By / Date: 8/24/18 8am

Received By / Date: 8/24/18

Received in Subcontract Lab By / Date: 8/27/18 1034

6.6/5.3/3.7 UP

18H1252

YORK
Analytical Laboratories, Inc.

8/23/2018

SUBCONTRACT Notification, Purchase Order and Chain-of-Custody
York Project No.: 18H1089

This information is being sent to inform you that York intends to subcontract certain samples to another licensed laboratory for specific parameters that we cannot perform in-house. The specific paramters that will be subcontracted are detailed below. Do not contact the subcontract laboratory directly. Please contact the YORK project manager for further information.

Note: E-mail lab reports to: York_Lab_Report@yorklab.com **Mail/Fax Hard Copies to: York Analytical at the address below**

Sample ID: 18H1089-05 **Matrix: Water** **Date Sampled : 08/22/2018 13:55**

Analysis Needed	Date Due	Holding Time Expires	Comments
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 13:55	ASP B and NYSDEC Equis required.
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 13:55	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

Sample ID: 18H1089-06 **Matrix: Water** **Date Sampled : 08/22/2018 10:20**

Analysis Needed	Date Due	Holding Time Expires	Comments
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 10:20	ASP B and NYSDEC Equis required.
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 10:20	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

Sample ID: 18H1089-07 **Matrix: Water** **Date Sampled : 08/22/2018 00:00**

Analysis Needed	Date Due	Holding Time Expires	Comments
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/19/2018 00:00	ASP B and NYSDEC Equis required.
PFAS in Water by EPA 537	09/07/2018 16:30	09/05/2018 00:00	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

York Purchase Order No.: 19370 Samples from State of: **NY**

Deliverables required: NYSDEC ASP B

EDDs required: NYSDEC Equis

Data Pkg DUE: 09/21/2018

Chain-of-Custody Information

Paul Grace	8/23/2018		8/24/18 8:49m
Released By York Sample Control	Date	Received By	Date
	8/24/18		8/24/18 1034
Received By	Date	Received in Subcontract Lab By	Date

6.6/5.3/3.7 HP

18H1250

YORK
Analytical Laboratories, Inc.

8/23/2018

SUBCONTRACT Notification, Purchase Order and Chain-of-Custody
York Project No.: 18H1089

This information is being sent to inform you that York intends to subcontract certain samples to another licensed laboratory for specific parameters that we cannot perform in-house. The specific paramters that will be subcontracted are detailed below. Do not contact the subcontract laboratory directly. Please contact the YORK project manager for further information.

Note: E-mail lab reports to: York_Lab_Report@yorklab.com **Mail/Fax Hard Copies to: York Analytical at the address below**

Sample ID: 18H1089-08 **Matrix: Water** **Date Sampled : 08/23/2018 12:18**

8

Analysis Needed	Date Due	Holding Time Expires	Comments
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/20/2018 12:18	ASP B and NYSDEC Equis required.
PFAS in Water by EPA 537	09/07/2018 16:30	09/06/2018 12:18	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 07_1000mL Amber Glass Cool to 4° C (D) 10_250mL Square Plastic Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

Sample ID: 18H1089-09 **Matrix: Water** **Date Sampled : 08/23/2018 12:20**

9

Analysis Needed	Date Due	Holding Time Expires	Comments
PFAS in Water by EPA 537	09/07/2018 16:30	09/06/2018 12:20	ASP B and NYSDEC Equis required.
1,4-Dioxane, 8270D SIM	09/07/2018 16:30	09/20/2018 12:20	ASP B and NYSDEC Equis required.

Containers Supplied:

07_1000mL Amber Glass Cool to 4° C (C) 10_250mL Square Plastic Cool to 4° C (D) 07_1000mL Amber Glass Cool to 4° C (E)
10_250mL Square Plastic Cool to 4° C (F)

18H1089-08
HP missing PFAS

York Purchase Order No.: 19370 Samples from State of: NY

Deliverables required: NYSDEC ASP B

EDDs required: NYSDEC Equis

Data Pkg DUE: 09/21/2018

Chain-of-Custody Information

Paul Grace	8/23/2018		8/24/18 8AM
Released By York Sample Control	Date	Received By	Date
	8/24/18		8/24/18 1034
Received By	Date	Received in Subcontract Lab By	Date

6.6 5.3 3.7
HP

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client: York Analytical

Received By: RAP Date: 8/2/18 Time: 1034

How were the samples received? In Cooler: T No Cooler: _____ On Ice: T No Ice: _____
Direct from Sampling: _____ Ambient: _____ Melted Ice: _____
By Gun #: 577 Actual Temp - 6.6 | 5.3 | 3.7

Were samples within Temperature? 2-6°C: F By Blank #: _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished ? T Does Chain Agree With Samples? T
Are there broken/leaking/loose caps on any samples? F
Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client: T Analysis: T Sampler Name: F
Project: T ID's: T Collection Dates/Times: T
Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? F Who was notified? _____
Is there enough Volume? T
Is there Headspace where applicable? F MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? F On COC? F
Do all samples have the proper pH? N/A Acid: _____ Base: _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	18	1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	19	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

~~Did not receive PFAS containers for sample 18408.~~
RAP