PERIODIC REVIEW REPORT

URBANA LANDFILL SITE
NYSDEC SITE NO. 8-51-007
URBANA, NEW YORK

August 2020 0001-001-300

Prepared for:

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Hammondsport, New York

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Urbana Landfill Site

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1.0 INTRODUCTION

Benchmark Environmental Engineering and Science, PLLC (Benchmark), has prepared this Periodic Review Report (PRR) for the Urbana Landfill site (Site No.8-51-007) on behalf of Mercury Aircraft, Inc. This PRR documents implementation of post-remedial measures undertaken at the site during the reporting period of June 30, 2018 through July 30, 2020. This PRR has been prepared in accordance with the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010). NYSDEC's Institutional and Engineering Controls Certification Forms have been prepared for the Site as well.

1.1 Background

The Urbana Landfill is located on Crow's Nest Road, approximately one mile northwest of the Village of Hammondsport, New York in Steuben County as shown on Figures 1 and 2. The landfill, which received municipal and industrial wastes, was classified by the New York State Department of Environmental Conservation (NYSDEC) as a Class 2 inactive hazardous waste disposal site (Site No. 8-51-007), indicating that it posed a significant threat to public health or the environment, and that remedial action was required. The landfill property encompasses an area of 20 acres, with approximately 13 acres dedicated to waste disposal. The property is currently owned by Steven and Tammy Perkins.

The New York State Department of Environmental Conservation (NYSDEC) performed a remedial investigation (RI) at the site in 1997 to determine the extent of contamination from past disposal practices. Industrial users of the landfill included Mercury Aircraft, Inc. who voluntarily reported the disposal of small quantities of chlorinated solvent still bottoms and paint sludge at the landfill. Mercury Aircraft subsequently retained Benchmark Environmental Engineering & Science, PLLC (Benchmark) to complete additional investigations at the site and to develop a Remedial Action Work Plan for the landfill. Mercury Aircraft executed an NYSDEC-issued Order on Consent covering design and construction of the remedial measures on June 21, 2000. Design plans and specifications were prepared by Benchmark and approved by NYSDEC in April 2001. Benchmark was retained by Mercury Aircraft to perform the remedial construction on a design-build basis. In accordance with the ROD, remedial measures implemented at the site included:

- Enhancement of the existing landfill cover;

- Collection and treatment of contaminated groundwater;
- Installation of a soil vapor extraction (SVE) system within "Hotspot 5" on the upper terrace of the landfill (SVE operations were deemed complete and terminated in 2004).
- Stream bank relocation/stabilization

1.2 Compliance and Recommendations

The groundwater collection and treatment system are operated and maintained by Mercury Aircraft in accordance with a "Post Remedial Operation and Maintenance Plan" (O&M Plan) dated May 2003. Monthly discharge sampling is performed as a component of that work. In addition, the Town of Urbana performs seasonal mowing and maintenance of the cover system and stream bank and maintains site access roads.

As further described in this report, the remedial measures remain protective of human health and the environment. No significant compliance issues have arisen related to the post-remedial measures undertaken to date. Accordingly, no changes to the collection and treatment system operation, landfill engineering controls or reporting approach are recommended at this time. Executed institutional and engineering control (IC/EC) certification forms are included in Appendix A.

2.0 SITE OVERVIEW

The Urbana Landfill encompasses an area of approximately 20 acres, of which approximately 13 acres were used for landfilling purposes. The Remedial Investigation (RI) and subsequent remedial action broke the site into sub-parcels based on elevation and topography. These sub-parcels, deemed the upper, middle, lower and western terraces, were allegedly subject to various trench filling operations, with the middle and lower terraces used more extensively for disposal than other areas. The landfill was officially closed in September of 1978, at which point two feet of cover soil were placed over the Site.

In 1982 it was reported that the Site had improper final cover and uncontrolled access. It was subsequently added to the NYSDEC Registry of Inactive Hazardous Waste Sites as a Class 2a Site, meaning additional information was required before the NYSDEC could determine the significance of the threat posed by the site conditions. The NYSDEC and New York State Department of Health (NYSDOH) conducted sampling at the Site in 1988 and again in 1992. In 1994 it was classified as a Class 2 site, indicating that it posed a significant threat to human health and/or the environment and that remedial action is required.

The geology of the site is described as glacial till overlying fractured shale and sandstone. The till deposits consist of sandstone and shale. Soils occupying the stream valley along the west side of the site are comprised of till and recent fluvial deposits (sand, gravel and cobbles) in the upper part, and boulders and till with a veneer of stream deposits in the lower portion near Crow's Nest Road.

There are two aquifers at the site; the overburden aquifer and the bedrock aquifer. Depth to groundwater at the Urbana Landfill ranges from 4.5' below ground surface (fbgs) to 28' fbgs in the overburden. The bedrock/groundwater interface is generally the most productive zone of groundwater in the overburden. In general overburden and upper bedrock groundwater flow is to the southwest toward the stream valley near Crow's Nest Road. Groundwater velocity is estimated at 0.55 to 1.8 feet per day.

Prior to remedial activities groundwater impacts were detected in several of the onsite shallow and intermediate monitoring wells, primarily in the southwest area of the site and at MW-103S on the upper terrace. Contaminants of concern (COCs) were generally limited to chlorinated volatile organic compounds (VOCs) and to a lesser extent petroleum-based VOCs. Certain metals were also present above NY State Class GA Groundwater Quality

Standards and Guidance Values (GQSGVs) but were largely comprised of naturally-occurring minerals (iron, calcium, potassium, sodium, etc.). Soil gas and subsurface soil sampling suggested the presence of certain "hotspot" areas within the landfill as characterized by elevated chlorinated VOC data, with "Hotspot 5" on the upper terrace of the landfill characterized by the highest concentration of VOCs.

Mercury Aircraft, Inc. voluntarily agreed to implement remedial measures at the Site following completion of the RI/FS. The basis for the remedial approach and design are presented in detail in the May 2000 Remedial Action Work Plan and April 2001 Design Plans and Specifications prepared by Benchmark. A brief description of the remedial measures implemented at the site is provided below.

2.1 Landfill Cover System

Supplemental (pre-design) investigation work performed by Mercury Aircraft indicated that much of the existing landfill had sufficient cover thickness and low permeability to provide an effective hydraulic barrier against infiltration consistent with the substantive requirements of 6NYCRR Part 360. To preclude contact with the waste and limit leachate generation, areas of the site where sufficient cover soil was not already present were enhanced with soil cover to provide a minimum of 24 inches of soil cover. The supplemental cover placed consisted of up to 18 inches of low permeability barrier layer and 6 inches of topsoil, and was seeded to promote vegetative (grass) cover.

A gas venting system, which consisted of gas venting wells, was installed at approximately one per acre. The gas venting wells were constructed to fully penetrate the cover system and unsaturated fill material. Gas vents were completed with a perforated PVC pipe, backfilled with select granular fill, and a solid riser pipe extending a minimum of three feet above the final cover system.

2.2 Groundwater Recovery and Treatment System

Contaminated groundwater is currently recovered along the western perimeter of the landfill between Crow's Nest Road and monitoring well MW-107 using submersible pumps in three vertical recovery wells. The groundwater is pumped to treatment equipment housed in a pre-cast concrete building located near Crow's Nest Road.

The treatment process incorporates advanced oxidation technology (AOT). AOT is a destructive process incorporating ultraviolet light and hydrogen peroxide to form hydroxyl radicals, which are powerful oxidizers that convert chlorinated organics to carbon dioxide, water, and chloride salts. The groundwater treatment process also incorporates an influent day tank to temporarily store groundwater and facilitate batch process treatment. A filtration system (bag filters) installed ahead of the day tank mitigates solids build-up in the tank and increases AOT efficiency. Groundwater is pumped from the day tank through the AOT unit. A hydrogen peroxide feed system incorporating a storage tank, metering pump, and control panel is installed in-line with the AOT unit. The feed system delivers 34 percent hydrogen peroxide to the groundwater influent line upstream of the AOT unit. Treated groundwater is discharged via gravity to an infiltration chamber located downgradient of the recovery wells.

2.3 Hot Spot 5 Remediation

Hot Spot 5, located in the upper terrace of the landfill, was remediated through SVE remediation. The SVE system was comprised of a series of six vertical extraction wells piped to a trailer-mounted vapor extraction system. The SVE system was started in June 2002 and operated until June 2004, with temporary shutdown of the trailer during the period of November through March to mitigate potential freeze-up of the SVE equipment and collection wells. Post-treatment confirmation sampling confirmed that the system had achieved remedial goals, and the trailer and extraction wells were permanently decommissioned.

2.4 Stream Bank Stabilization

NYSDEC requested that 30 feet of separation be maintained between the landfill and an unnamed stream located to the west of the landfill. This was accomplished by regrading and consolidating portions of the waste along the west bank of the landfill and by relocating and stabilizing (with riprap) two sections of the stream away from the landfill.

2.5 Deed Restriction

In fall of 2015 the NYSDEC provided written request that a deed restriction be placed upon the area of the Urbana Landfill property that was subject to historic disposal and subsequent remedial measures. Mercury Aircraft subsequently retained a Licensed Professional Surveyor to provide a formal boundary survey of the inactive landfill property, which was based upon the limits of the landfill as established during the Remedial Investigation and subsequent pre-remedial design investigation and cleanup work. The deed restriction was filed with Steuben County by Mercury Aircraft on behalf of the property owners in March of 2017.

3.0 POST REMEDIAL MONITORING COMPLIANCE

Components of the post remedial monitoring plan are described below.

3.1 Groundwater Recovery and Treatment System

Contaminated groundwater is recovered along the western perimeter of the landfill between Crow's Nest Road and MW-107 using submersible pumps in three vertical recovery wells. The groundwater is pumped to treatment equipment housed in a pre-cast concrete building located near Crow's Nest Road and treated via an Advanced Oxidation Technology (AOT) process as described in Section 2.2. Effluent samples and flow measurements are collected on a monthly basis. Effluent samples are analyzed for Target Compound List VOCs via Method 8260. In June 2011 the NYSDEC approved a reduced reporting frequency whereby monthly data is reported to the Department on a quarterly basis unless discharge concentrations exceed Class GA Groundwater Quality Standards & Guidance Values (GWQSGVs), in which case notification is required upon receipt of the non-conformant data.

Table 1, attached, presents a summary of the effluent results for the period of June 2018 through August 2020. The results indicate non-detectable concentrations or only trace levels of residual VOCs below the associated GWQSGVs.

Over 15,003,240 gallons of water have been treated through mid-July 2020.

3.2 Groundwater Monitoring

Post remedial monitoring of all the site groundwater monitoring wells was performed in January 2009, with select wells resampled in July 2020 for VOCs and emerging contaminants. The monitoring was performed as requested by the NYSDEC in consideration of potential reclassification of the site.

The groundwater sampling was performed in general accordance with the NYSDEC-approved July 16, 2020 Work Plan as summarized below.

3.2.1 Sampling Procedure

On July 23, 2020 Benchmark removed dedicated low-density polyethylene (LDPE) tubing, bailers and bailer cord from the wells slated for emerging contaminant analysis to mitigate potential positive PFAS bias. Benchmark field personnel subsequently performed the sampling event on July 28-29, 2020. As part of the quality control process a field blank/equipment blank was prepared for the groundwater monitoring event. The blank was compromised of laboratory supplied PFAS-free water which was poured over and/or brought into direct contact with all sampling equipment (bailer, rope, tubing, gloves water level tape, etc.). The uncapped blank was then placed near the field crew while preparations for well purge and sampling took place (prepare bottle set, calibrate groundwater quality meters, prepare bailers for sampling). This is intended to capture ambient PFAS compounds that may emanate from the field crew or equipment during typical preparations associated with groundwater sampling. The equipment blank was then sealed and returned to the cooler on ice.

The groundwater wells were purged and sampled using dedicated disposable PVC bailers and nylon bailer cord. Groundwater quality parameters (pH, temperature, turbidity, ORP, specific conductance) were periodically recorded until three (3) well volume were removed or well was purged to dryness. Upon removal of three well volumes, groundwater samples for the emergent contaminants were collected. At wells designated for emerging contaminant analysis samples for PFAS were collected first and transferred to laboratory provided containers: two (2) 250 ml plastic bottles unpreserved for each well location. Samples collected for 1,4-dioxine analysis were placed into laboratory provided containers comprised of two (2) 250 ml unpreserved amber bottles per well location. Samples for VOC analysis were then collected and transferred to pre-preserved 40-ml vials. In addition to the above-described blank, quality assurance/quality control (QA/QC) samples collected during the event included one (1) site-specific blind duplicate (BD) sample collected at MW- 108S and one (1) matrix spike/matrix spike duplicate (MS/MSD) sample collected from MW-107D for the VOCs and from MW-202S for the emerging contaminants.

Before groundwater samples were collected, sampling personnel donned nitrile gloves while handling empty sample containers, filling sample containers, sealing sample containers, and placing containers into sample coolers. New gloves were donned at each sample

location. Samples were placed on ice prior to transportation to the laboratory. Field data sheets are presented in Appendix B.

3.2.2 Sample Analysis

Groundwater samples were sent under chain of custody command to Eurofins TestAmerica, Buffalo, an ELAP certified laboratory which provided a Category B deliverable package for preparation of a Data Validation Usability Summary Report (DUSR) by a third-party data validator.

Samples were analyzed via a modified EPA Method 537 for PFAS analysis, via EPA Method 8270 Selective Ion Monitoring (SIM) mode for 1,4-dioxine analysis and EPA via Method 8260B for VOC analysis.

3.2.3 Analytical Results

Analytical results are summarized on Tables 2 & 3; the analytical data package is presented in Appendix B of this report. Non-detect results are noted with their corresponding reporting limit.

As indicated in Table 2, all samples fall below NYSDEC guidance of 70 ng/L for total PFOA and PFOS compounds and 500 ng/L for total PFAS with the exception of MW-108S, which exhibited slight exceedance of the 70 ng/L criteria. 1,4 – Dioxane was reported as non-detect at all monitoring locations with the exception of MW-107S and MW-108S which exhibited concentrations above the 0.35 ng/L criteria.

As indicated on Table 3 monitoring wells MW-104S, MW-108S and MW-108I exhibited VOC concentrations lower than previous sampling events. VOC concentrations in monitoring wells MW-107S and 202S were generally consistent with historical sampling events. Monitoring well MW-103D exhibited VOC concentrations one magnitude higher than the previous sampling events. Monitoring wells MW-107D and 101S (upgradient) were non-detect for all VOC analysis.

Data Validation Services of North Creek, New York reviewed and validated the analytical data. The Data Usability Summary Report (DUSR) is included in Appendix B.

We are presently uploading the data in electronic data delivery (EDD) format to NYSDEC's EQuIS database.

3.3 Soil Vapor Extraction (SVE) System

As indicated in Section 2.4 the SVE system was decommissioned in July 2004, and as such the SVE operation is not part of the post remedial monitoring program.

3.4 Deed Restriction

At the time of the Site Inspection the property appeared conformant with the deed restriction. No permanent buildings were present on the property other than the groundwater treatment system, and no evidence of groundwater use was observed. A mobile home was observed west of the access road in the middle terrace of the landfill. Benchmark observed that the trailer has no utility connections nor was it furnished. The property owner (Steven Perkins) was contacted concerning the trailer; Mr. Perkins indicated that it is temporarily parked at that location but is not being used for any residential purpose, and that it is slated to be removed from the site by a member of his family.

4.0 OPERATION & MAINTENANCE COMPLIANCE

Major components of the Operation and Maintenance Plan include the Groundwater Treatment System and the Landfill Cover System. Specific Operation & Maintenance (O&M) requirements are presented below.

4.1 Groundwater Treatment System

O&M activities of the Groundwater Treatment System include periodic maintenance of the treatment system equipment and monthly compliance effluent discharge monitoring. Periodic maintenance completed during this monitoring period included changing of the treatment system filtration bag filters, and refilling of the hydrogen peroxide feed storage tank. A log sheet documenting these activities is maintained within the groundwater treatment system building. The unit was professionally serviced by the manufacturer, Calgon Carbon, in July of 2019.

Effluent monitoring results are presented in Table 1. The monitoring was intermittent during the period in part due to maintenance issues that precluded sampling as well as a misunderstanding of duties on the part of new personnel assigned to monitor the unit. Monthly sampling has resumed the system continues to remove VOCs to non-detect or near non-detect levels.

4.2 Landfill Cover System

O&M activities of the Landfill Cover System include the following:

- Monitoring well repair (as necessary)
- Cover system and stream riprap inspection
- Gas venting system inspection
- Semi-annual cover system mowing
- Minor cover system/riprap repairs (as necessary)

- Repair/replace poplar trees (as necessary)
- Maintain and plow access road and groundwater treatment system driveway as necessary
- Fencing/gate repair (as necessary)

4.2.1 Landfill Site Inspection

An inspection of the landfill cover system was performed on July 23, 2020. Observations made during the inspection indicate the vegetative cover is well established, with no evidence of erosion. There were no indications of leachate breakouts and /or staining on the cover system. Mowing of the cover system turf was performed by the Town of Urbana in June 2020. A photo log of the site walkover is presented in Appendix C of this report.

4.3 Stream Bank Stabilization

Inspection of the stream bank stabilization was performed during the July 23, 2020 site reconnaissance. The inspection indicated that vegetation has grown into the riprap and stone bedding (as expected), but no encroachment of the stream toward the landfill has occurred.

5.0 DOWN GRADIENT PROPERTIES

No development has occurred on down-gradient properties proximate to the site during this reporting period. If development does occur, a Soil Vapor Intrusion (SVI) evaluation will be performed on the down gradient property. This SVI evaluation submittal will be reviewed and approved by NYSDOH and NYSDEC.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The subject property in compliance with current post-remedial Site Management requirements. No development of the property or changes in use that would result in increased human health exposure or fish and wildlife impact were observed. The institutional and engineering controls remain in effect. Components of the post-closure requirements have achieved the remedial action objectives for the site.

Concentrations for both total PFOA and PFOS & total PFAS fell well below the NYSDEC Emergent Contaminant thresholds at all wells except MW-108S. VOC concentrations similar with past monitoring events, with no detections in upgradient well MW-101S.

Based on these sampling results, no further sampling for emerging contaminants is proposed.

7.0 DECLARATIONS AND LIMITATIONS

Benchmark personnel conducted the IC/EC inspection for the property addressed as Town of Urbana Landfill, Urbana, New York, according to generally accepted practices. This report complies with the scope of work provided to Mercury Aircraft Inc. by Benchmark.

This report has been prepared for the exclusive use of Mercury Aircraft, Inc. The contents of this report are limited to information available at the time of the site inspection. The findings herein may be relied upon only at the discretion of Mercury Aircraft, Inc. Use of or reliance upon this report or its findings by any other person or entity is prohibited without written permission of Benchmark Environmental Engineering and Science, PLLC.

TABLES

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 1

SUMMARY OF MONTHLY EFFLUENT GROUNDWATER TREATMENT SYSTEM RESULTS

TOWN OF URBANA LANDFILL

URBANA, NEW YORK

Effluent Sampling Event	Volume Data (Gal)		Volatile Organic Compounds (VOCs) (mg/l)[1]				
	Total Volume	Period Total	Acetone	Cis 1,2, Dichloroethene	Trichloroethene	Vinyl chloride	Total VOCs
June 2017	14,048,740	80,240	0.0144	ND	ND	ND	0.0144
July 2017 [(2)]	14,097,170	48,430	ND	0.2	0.108	0.038	0.346
August 2017	14,146,360	49,190	ND	ND	ND	ND	ND
September 2017	14,163,830	(3)	-	-	-	-	-
October 2017	14,194,350	(4)	-	-	-	-	-
November 2017	14,233,700	39,350	ND	ND	ND	ND	ND
December 2017	14,247,260	13,560	0.0113	ND	ND	ND	0.0113
January 2018	14,259,190	11,930					
February 2018	14,294,040	34,850	ND	ND	ND	ND	ND
March 2018	(5)	(5)	-	-	-	-	-
April 2018	14,414,940	120,900	0.0152	ND	ND	ND	0.0152
August 2020	15,003,240	520,110	ND	ND	ND	ND	ND

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table.
2. Results atypical: suspected low lamp amperage.
3. System shutdown. UV lamp replaced. No sample collected
4. System shutdown. Peroxide feed pump repaired. No sample collected
5. System shutdown - PLC malfunction. No sample collected

Definitions:

ND = Parameter not detected above laboratory detection limit.

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TABLE 2

SUMMARY OF EMERGING CONTAMINANTS GROUNDWATER ANALYTICAL RESULTS

URBANA LANDFILL SITE
URBANA, NEW YORK

PARAMETERS	NYSDEC Emergent Contaminant Threshold [1]	Sample Location and Date							
		MW-101S	MW-103D	MW-104S	MW-107S	MW-107D	MW-108S	MW-108I	MW-202S
		7/29/2020	7/29/2020	7/29/2020	7/28/2020	7/28/2020	7/28/2020	7/28/2020	7/29/2020
1,4 Dioxane - ug/L									
1,4 Dioxane	**0.35**	ND < 0.40	ND < 0.20	ND < 0.20	3.4 E	ND < 0.20	0.52	ND < 0.20	0.24 J
Perfluorinated Alkyl Acids - ng/L									
Perfluorobutanoic acid (PFBA)	--	2 B	ND < 0.86	ND < 0.86	5.5	ND < 0.86	3.32	ND < 0.86	ND < 0.86
Perfluoropentanoic acid (PFPeA)	--	ND < 0.88	ND < 0.88	ND < 0.88	9.88 J	ND < 0.88	3.18	ND < 0.88	0.77 J
Perfluorobutanesulfonic acid (PFBS)	--	ND < 0.43	ND < 0.43	ND < 0.43	0.81 J	ND < 0.43	2.77	ND < 0.43	ND < 0.42
Perflurorohexanoic acid (PFHxA)	--	ND < 0.67	ND < 0.67	ND < 0.67	7.59	ND < 0.67	3.89	ND < 0.67	0.72 J
Perfluoroheptanoic acid (PFHpA)	--	ND < 0.84	ND < 0.84	ND < 0.84	2.21	ND < 0.84	2.98	ND < 0.84	ND < 0.79
Perfluorohexanesulfonic acid (PFHxS)	--	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	6.14	ND < 0.70	ND < 0.69
Perfluorooctanoic acid (PFOA)	--	0.86 J	ND < 0.70	ND < 0.70	4.54	ND < 0.70	26.4	ND < 0.70	1.92
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2FTS)	--	ND < 4.82	ND < 4.82	ND < 4.82	ND < 4.81	ND < 4.82	ND < 5.23	ND < 4.82	ND < 4.75
Perfluoroheptanesulfonic acid (PFHpS)	--	ND < 0.83	ND < 0.83	ND < 0.83	ND < 0.83	ND < 0.83	1.92	ND < 0.83	ND < 0.82
Perfluorononanoic acid (PFNA)	--	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	0.93 J	ND < 0.24	ND < 0.23
Perfluorooctanesulfonic acid (PFOS)	--	4.12	ND < 0.53	ND < 0.53	0.98 J	ND < 0.53	50.5	ND < 0.53	0.6 J F2
Perfluorodecanoic acid (PFDA)	--	ND < 0.68	ND < 0.68	ND < 0.68	ND < 0.67	ND < 0.68	ND < 0.73	ND < 0.68	ND < 0.66
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2FTS)	--	ND < 2.54	ND < 2.54	ND < 2.54	ND < 2.54	ND < 2.54	ND < 2.76	ND < 2.54	ND < 2.50
N-Methyl Perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	--	ND <1.49	ND <1.49	ND <1.49	ND <1.49	ND <1.49	ND <1.43	ND <1.49	ND <1.47
Perfluoroundecanoic Acid (PFUnA)	--	ND < 0.68	ND < 0.68	ND < 0.68	ND < 0.68	ND < 0.68	ND < 0.74	ND < 0.68	ND < 0.67
Perfluorodecanesulfonic acid (PFDS)	--	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.86	ND < 0.79	ND < 0.78
Perfluorooctanesulfonamide (FOSA)	--	ND < 8.77	ND < 8.77	ND < 8.77	ND < 8.75	ND < 8.77	ND < 9.52	ND < 8.77	ND < 8.63
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	ND <1.32	ND <1.32	ND <1.32	ND <1.31	ND <1.32	ND <1.43	ND <1.32	ND <1.29
Perfluorododecanoic Acid (PFDoA)	--	ND < 0.52	ND < 0.52	ND < 0.52	ND < 0.52	ND < 0.52	ND < 0.56	ND < 0.52	ND < 0.51
Perfluorotridecanoic Acid (PFTriA)	--	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.52	ND < 0.53	ND < 0.57	ND < 0.53	ND < 0.52
Perfluorotetradecanoic acid (PFTeA)	--	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.80	ND < 0.81	ND < 0.88	ND < 0.81	ND < 0.79
Total PFOA and PFOS	**70**	*5.0*	*0.0*	*0.0*	*5.5*	*0.0*	**76.9**	*0.0*	*2.5*
Total PFAS	**500**	*7.0*	*0.0*	*0.0*	*31.5*	*0.0*	*102.0*	*0.0*	*4.0*

Notes:

1. Contaminant threshold values per NYSDEC Emergent Contaminant Initial Site Sampling Results Checklist.

Definitions:

ng/L = nanograms per liter
ug/L = micrograms per liter
"--" = No contaminant threshold value available for the parameter.
ND < 3.7 = Parameter not detected above method detection limit.
J = Estimated Value - The target analyte concentration is below the Reporting Limit (RL) but above the the Method Detection Limit (MDL)
B = Compound was found in the Blank and Sample.
E = Result exceeded calibration range.
F2= MS/MSD RPD exceeds control limits.

BOLD = Result exceeds NYSDEC Emergent Contaminant Threshold.

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TABLE 3

ANALYTICAL DATA SUMMARY

Groundwater Monitoring Event - January 2009/July 2020
Urbana Landfill - Site Code 8-51-007
Urbana, New York

PARAMETER	Monitoring Location																						GWQS [2]
	Jan-09	Jul-20	Jan-09	Jan-09	Jan-09	Jan-09	Jul-20	Jan-09	Jul-20	Jan-09	Jan-09	Jan-09	Jul-20	Jan-09	Jul-20	Jan-09	Jul-20	Jan-09	Jul-20	Jan-09	Jan-09	Jan-09	Jan-09	
	MW-101S		MW-101D	MW-102D	MW-103S	MW-103D		MW-104S		MW-105S	MW-106D	MW-107S		MW-107D		MW-108S		MW- 108I		MW-108D	MW-109S	MW-109D	MW-110S	
Field Measurements [6]:																								
pH (units)	6.87	6.98	7.48	7.74	(7)	7.24	7.00	6.35	6.43	6.76	7.65	7.21	7.19	7.33	7.88	7.16	6.57	6.84	6.63	7.63	7.11	7.49	(7)	6.5 - 8.5
Temperature (°C)	6.5	15.1	7.9	7.4	(7)	7.0	12.8	5.6	12,2	6.6	8.4	6.8	15.0	8.3	13.6	4.2	12.6	7.3	11.7	6.4	3.4	8.1	(7)	NA
Sp. Conductance (uS)	148	238	234.9	334	(7)	421	428	1050	1045	886	542.7	865	909	816.5	568	750	763	834	736	780	692.1	485	(7)	NA
Turbidity (NTU)	>100	>100	63	45	(7)	26.2	185	87	62.6	42.3	2	>100	66.1	16.4	38	38.6	56	195	245	6.17	78.7	5.43	(7)	NA
Eh (mV)	- 26	+ 81	+ 113	+ 63	(7)	+ 107	+ 73	- 48	- 70	- 76	+ 95	0	- 58	+ 94	- 70	+ 122	+ 115	+ 133	+ 116	+ 84	+ 68	+ 46	(7)	NA
Volatile Organic Compounds (ug/L):																								
Acetone	ND	ND	ND	ND	(7)	ND	ND	2.6 J	3.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
Benzene	ND	ND	ND	ND	(7)	ND	ND	**4.3**	**4.2**	0.56 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	1
1,1,1-Trichloroethane	ND	ND	ND	1.7	(7)	**84**	**800**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
1,1-Dichloroethane	ND	ND	ND	ND	(7)	**45**	**300**	ND	ND	0.92 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
1,1-Dichloroethene	ND	ND	ND	ND	(7)	**9.1**	**130**	ND	ND	ND	ND	4.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
1,2-Dichlorobenzene	ND	ND	ND	ND	(7)	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	3
1,4-Dichlorobenzene	ND	ND	ND	ND	(7)	ND	ND	**5.9**	**2.9**	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	3
Chlorobenzene	ND	ND	ND	ND	(7)	ND	ND	**18**	**4.9**	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
Chloroethane	ND	ND	ND	ND	(7)	**20**	**11 J**	ND	ND	1.3	ND	**7.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
cis-1,2-Dichloroethene	ND	ND	ND	ND	(7)	**23**	**270**	ND	ND	1.8	ND	**1100**	**740**	**0.57**	ND	**20**	**6.3**	**19**	**4.2**	2.3	ND	ND	(7)	5
Isopropylbenzene	ND	ND	ND	ND	(7)	ND	ND	4.3	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
Methylene Chloride	ND	ND	ND	ND	(7)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
trans-1,2-Dichloroethene	ND	ND	ND	ND	(7)	ND	ND	ND	ND	ND	ND	3.8	ND	ND	ND	2	ND	0.66 J	ND	ND	ND	ND	(7)	5
Trichloroethene	ND	ND	ND	ND	(7)	**62**	**1300**	ND	ND	1.1	ND	**140**	**14 J**	ND	ND	**12**	**5.7**	**19**	**8.3**	0.78 J	ND	ND	(7)	5
Vinyl Chloride	ND	ND	ND	ND	(7)	**5.5**		ND	ND	0.82 J	ND	**290**	**360**	ND	ND	ND	ND	0.72 J	ND	ND	ND	ND	(7)	2
Xylenes, Total	ND	ND	ND	ND	(7)	ND	ND	**150**	**44**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(7)	5
Total VOCs	**0**		**0**	**1.7**	**0**	**248.6**	**2811**	**186.9**	**61.5**	**9.6**	**0**	**1545.8**	**1114**	**0.57**	**0**	**34**	**12**	**39.38**	**12.5**	**3.08**	**0**	**0**	**0**	**NA**

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 3 (continued)

ANALYTICAL DATA SUMMARY

Groundwater Monitoring Event - January 2009/ July 2020
Urbana Landfill - Site Code 8-51-007
Urbana, New York

PARAMETER	Monitoring Location																GWQS [2]
	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jan-09	Jul-20	Jan-09	Jan-09	Jan-09	Jan-09	
	MW-110D	MW-111S	MW-111D	MW-112S	MW-112D	MW-113S	MW-113D	MW-114S	MW-201S	MW-201D	MW-202S		MW-202D	PW-1	PW-2	PW-3	
Field Measurements [6]:																	
pH (units)	7.13	(7)	6.98	6.72	**12.30**	6.93	(8)	(7)	7.17	**9.28**	8.09	6.88	**12.04**	6.62	6..63	6.88	6.5 - 8.5
Temperature (^{o}C)	6.0	(7)	9.0	9.0	8.0	6.7	(8)	(7)	8.2	6.3	7.1	12.1	6.8	15.4	17.9	16.0	NA
Sp. Conductance (uS)	992	(7)	749	850	4124	670	(8)	(7)	676.6	180.1	151	277	1472	945	989	567	NA
Turbidity (NTU)	7.8	(7)	86	345	66	8.3	(8)	(7)	>100	28	532	16.4	3.8	13	12.8	13.1	NA
Eh (mV)	+ 16	(7)	+ 22	+ 138	- 85	+ 150	(8)	(7)	- 28	+ 7	+ 77	+ 63	- 61	- 22	- 13	0	NA
Volatile Organic Compounds (ug/L):																	
Acetone	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	**9.1**	5
Benzene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	0.78 J	ND	ND	1
1,1,1-Trichloroethane	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	0.95 J	ND	ND	5
1,1-Dichloroethene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	2.2	2.2	ND	5
1,2-Dichlorobenzene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	ND	3
1,4-Dichlorobenzene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	ND	3
Chlorobenzene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroethane	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	**7.6**	ND	ND	5
cis-1,2-Dichloroethene	ND	(7)	ND	ND	ND	4	(8)	(7)	ND	ND	**20**	**54**	2	**530**	**400**	**39**	5
Isopropylbenzene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	ND	5
Methylene Chloride	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	**8.3**	5
trans-1,2-Dichloroethene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	0.29 J	ND	ND	2.2	1.1	ND	5
Trichloroethene	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	**40**	**91**	0.63 J	**210**	**27**	**5.3**	5
Vinyl Chloride	ND	(7)	ND	ND	ND	**4.5**	(8)	(7)	ND	ND	ND	ND	ND	**89**	**39**	ND	2
Xylenes, Total	ND	(7)	ND	ND	ND	ND	(8)	(7)	ND	ND	ND	ND	ND	ND	ND	ND	5
Total VOCs	**0**	**0**	**0**	**0**	**0**	**8.5**	**0**	**0**	**0**	**0**	**60.29**	**145**	**2.63**	**842.73**	**469.3**	**61.7**	**NA**

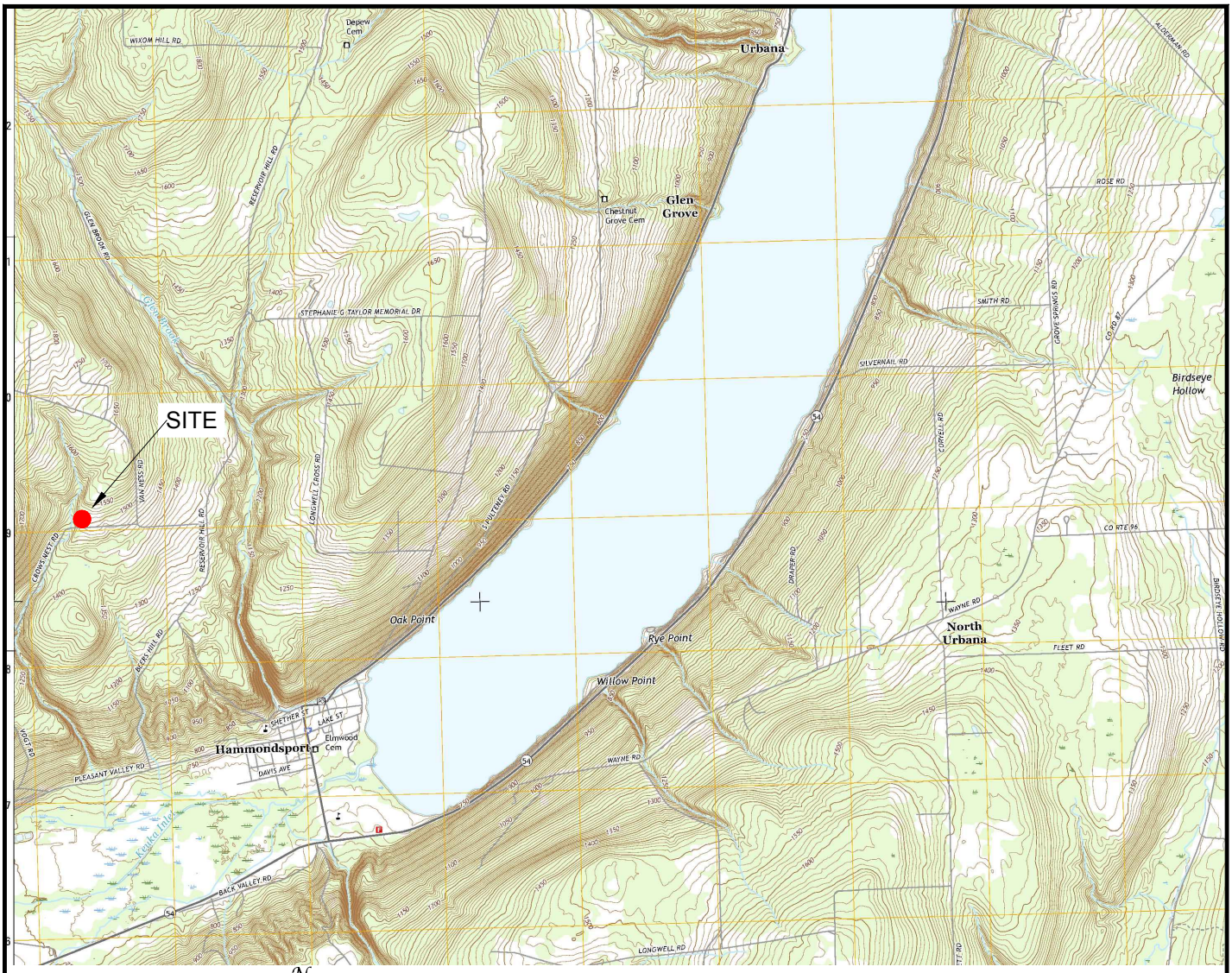
Notes:

1. Only those compounds detected above the method detection limit at a minimum of one sample location are reported in this table, all others were reported as non-detect.
2. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) as per 6 NYCRR Part 703. Guidance value used when Standard value not available.
3. Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis performed on groundwater sample collected from MW-112S (Jan 09) & from MW-107 D/ MW-202S (Jul 20)
4. Blind Duplicate sample collected from MW-108D (Jan 09) and from MW-108S (Jul 20)
5. "ND" indicates parameter was not detected above laboratory reporting limit and is reported herein as not detected (ND).
6. Field measurements were collected immediately before sample collection.
7. Well was damaged, therefore no sample was obtained.
8. Well was frozen, therefore no sample was obtained.
9. " PW " = Pumping Well
10. " J " indicates the analyte was detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

= concentration exceeds the GWQS

FIGURES

FIGURE 1



4,000' 0' 4,000' 8,000'

SCALE: 1 INCH = 4,000 FEET
SCALE IN FEET
(approximate)

QUADRANGLE LOCATION

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

PROJECT NO.: 0001-001-300

DATE: JULY 2018

DRAFTED BY: CMC/CCB

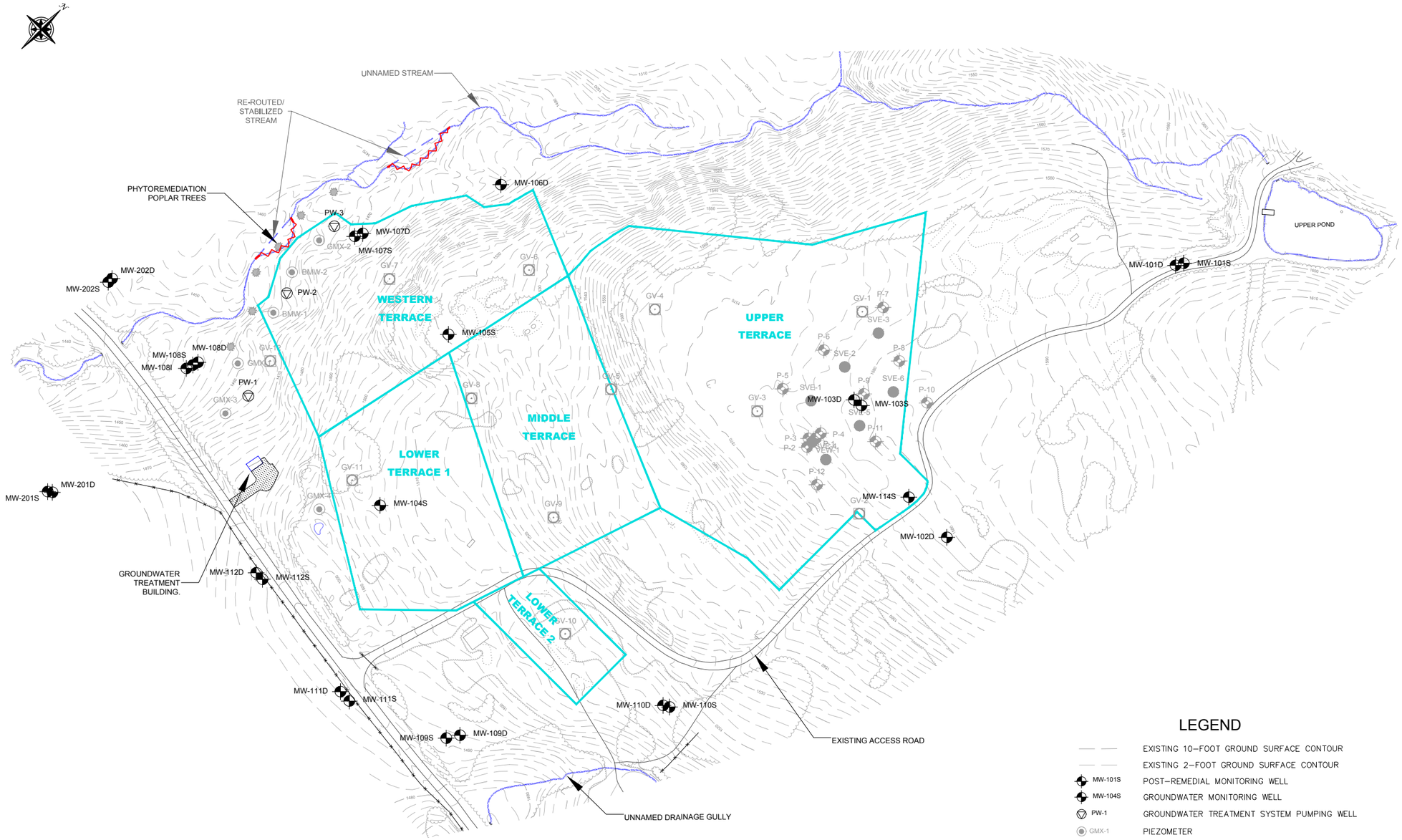
SITE LOCATION AND VICINITY MAP

PERIODIC REVIEW REPORT

URBANA LANDFILL SITE
NYSDEC SITE No. 8-51-007
URBANA, NEW YORK

PREPARED FOR

MERCURY AIRCRAFT, INC.



DATE: JULY 2018
DRAFTED BY: CMC/CCB

F:\CAD\Benchmark\Mercury Aircraft\Post-Closure Monitoring Plan\Periodic Review Report\2018\Figure 2 - Site Plan.dwg, 6/5/2018 4:49:40 PM, DWG To PDF.pc3

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

JOB NO.: 0001-001-300

SITE PLAN

PERIODIC REVIEW REPORT

URBANA LANDFILL SITE
NYSDEC SITE No. 8-51-007
URBANA, NEW YORK

PREPARED FOR
MERCURY AIRCRAFT, INC.

FIGURE 2

APPENDIX A

INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 851007

Site Name Urbana Landfill

Site Address: Crow's Nest Road Zip Code: 14840
City/Town: Hammondsport
County: Steuben
Site Acreage: 14.170

Reporting Period: ~~June 30, 2017 to June 30, 2018~~ July 30. 2018 to July 30, 2020

	YES	NO
1. Is the information above correct?	X	
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?		X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial	X	
7. Are all ICs/ECs in place and functioning as designed?	X	

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 851007 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
103.00-01-005.100	Steve and Tammi Perkins	Site Management Plan

The PRP must operate the groundwater treatment system until the Record of Decision cleanup goals are achieved.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
103.00-01-005.100	Groundwater Treatment System

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 851007

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joseph F. Meade IV (print name) at Mercury Corp 8126 County Rte 88, Hammondsport, NY 14840 (print business address),

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

7/23/20
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Thomas Forbes (print name) at Benchmark Environmental Engineering 2558 Itamburg TPKE. Buffalo NY 14218 (print business address),

am certifying as a Professional Engineer for the Remedial Party (Owner or Remedial Party)

STATE OF NEW YORK
THOMAS H. FORBES
No. 109501
LICENSED PROFESSIONAL ENGINEER
Stamp (Required for PE)

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

8-24-20
Date

APPENDIX B

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 480-173244-1
Client Project/Site: Benchmark - Urbana LF GWM

For:
Benchmark Env. Eng. & Science, PLLC
2558 Hamburg Turnpike
Suite 300
Lackawanna, New York 14218

Attn: Mr. Rick Dubisz

Authorized for release by:
8/14/2020 9:35:04 AM

Brian Fischer, Manager of Project Management
(716)504-9835
Brian.Fischer@Eurofinset.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 480-173244-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-173244-1

Comments
No additional comments.

Receipt
The samples were received on 7/30/2020 2:42 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.1° C.

GC/MS VOA
Method 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW 103D (480-173244-2), MW 107S (480-173244-4) and MW 202S (480-173244-8). Elevated reporting limits (RLs) are provided.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-543631 recovered outside acceptance criteria, low biased, for Chloromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The associated samples are impacted: MW 101S (480-173244-1), MW 103D (480-173244-2), MW 104S (480-173244-3), MW 107S (480-173244-4), MW 107D (480-173244-5), MW 108S (480-173244-6), MW 108I (480-173244-7), MW 202S (480-173244-8), BLIND DUP (480-173244-9) and TRIP BLANK (480-173244-11).

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

GC/MS Semi VOA
Method 8270D SIM ID: The 1,4-Dioxane result reported for sample MW 107S (480-173244-4) have an E flag qualifier indicating the results are over the calibration range on the raw data. The actual amounts are within the calibration range; however, the E flag is generated based upon the bias corrected concentration. The LIMS system calculates a bias correction based on the recovery of the 1,4-Dioxane-d8 isotope. MW 107S (480-173244-4)

Method 8270D SIM ID: Sample MW 202S (480-173244-8) was extracted using two combined 250ml Amber volumes, the associated MS/SD did not have sufficient volume provided to to yield reportable results.

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

LCMS
Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 200-157617 and analytical batch 200-157695 was outside control limit Perfluorooctanesulfonic acid (PFOS). Sample matrix interference is suspected.

Method 537 (modified): The low level continuing calibration verification (CCVL) associated with batch 200-157695 recovered above the upper control limit for 8:2 FTS, however this CCV is actually below the RL for this target. The CCVL for 8:2 FTS passes acceptance criteria.

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

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 480-543599.

Method 3510C: 3510C method requirement for Buffalo lab initial volume 1000ml but client provided insufficient volume so technician used less volume to prep.
MW 107S (480-173244-4), MW 108S (480-173244-6), MW 202S (480-173244-8), MW 202S MS (480-173244-8[MS]), MW 202S MSD (480-173244-8[MSD]), BLIND DUP (480-173244-9) and EQUIP BLANK (480-173244-10)

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

Detection Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

Client Sample ID: MW 101S — Lab Sample ID: 480-173244-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.86	J	1.75	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.12		1.75	0.53	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW 103D — Lab Sample ID: 480-173244-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	800		20	16	ug/L	20		8260C	Total/NA
1,1-Dichloroethane	300		20	7.6	ug/L	20		8260C	Total/NA
1,1-Dichloroethene	130		20	5.8	ug/L	20		8260C	Total/NA
Chloroethane	11	J	20	6.4	ug/L	20		8260C	Total/NA
cis-1,2-Dichloroethene	270		20	16	ug/L	20		8260C	Total/NA
Trichloroethene	1300		20	9.2	ug/L	20		8260C	Total/NA

Client Sample ID: MW 104S — Lab Sample ID: 480-173244-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	2.9		1.0	0.84	ug/L	1		8260C	Total/NA
Acetone	3.5	J	10	3.0	ug/L	1		8260C	Total/NA
Benzene	4.2		1.0	0.41	ug/L	1		8260C	Total/NA
Chlorobenzene	4.9		1.0	0.75	ug/L	1		8260C	Total/NA
Isopropylbenzene	2.0		1.0	0.79	ug/L	1		8260C	Total/NA
Xylenes, Total	44		2.0	0.66	ug/L	1		8260C	Total/NA

Client Sample ID: MW 107S — Lab Sample ID: 480-173244-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	740		20	16	ug/L	20		8260C	Total/NA
Trichloroethene	14	J	20	9.2	ug/L	20		8260C	Total/NA
Vinyl chloride	360		20	18	ug/L	20		8260C	Total/NA
1,4-Dioxane	3.4	E	0.40	0.20	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	5.50		1.75	0.87	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	9.88		1.75	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.59		1.75	0.66	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.21		1.75	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.54		1.75	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.81	J	1.75	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.98	J	1.75	0.53	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW 107D — Lab Sample ID: 480-173244-5

No Detections.

Client Sample ID: MW 108S — Lab Sample ID: 480-173244-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	6.3		1.0	0.81	ug/L	1		8260C	Total/NA
Trichloroethene	5.7		1.0	0.46	ug/L	1		8260C	Total/NA
1,4-Dioxane	0.52		0.40	0.20	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	3.32		1.90	0.95	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.18		1.90	0.60	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.89		1.90	0.72	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.98		1.90	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	26.4		1.90	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.93	J	1.90	0.26	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW 108S (Continued)
Lab Sample ID: 480-173244-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.77		1.90	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.14		1.90	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.92		1.90	0.90	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	50.5		1.90	0.58	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW 108I
Lab Sample ID: 480-173244-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.2		1.0	0.81	ug/L	1		8260C	Total/NA
Trichloroethene	8.3		1.0	0.46	ug/L	1		8260C	Total/NA

Client Sample ID: MW 202S
Lab Sample ID: 480-173244-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	54		4.0	3.2	ug/L	4		8260C	Total/NA
Trichloroethene	91		4.0	1.8	ug/L	4		8260C	Total/NA
1,4-Dioxane	0.24	J	0.40	0.20	ug/L	1		8270D SIM ID	Total/NA
Perfluoropentanoic acid (PFPeA)	0.77	J	1.73	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.72	J	1.73	0.66	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.92		1.73	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.60	J F2	1.73	0.53	ng/L	1		537 (modified)	Total/NA

Client Sample ID: BLIND DUP
Lab Sample ID: 480-173244-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	6.1		1.0	0.81	ug/L	1		8260C	Total/NA
Trichloroethene	5.4		1.0	0.46	ug/L	1		8260C	Total/NA
1,4-Dioxane	0.53		0.40	0.20	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	3.21		1.78	0.89	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.05		1.78	0.56	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.27		1.78	0.68	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.92		1.78	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	26.8		1.78	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.62	J	1.78	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.62		1.78	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.97		1.78	0.71	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.15		1.78	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	56.7		1.78	0.54	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EQUIP BLANK
Lab Sample ID: 480-173244-10

No Detections.

Client Sample ID: TRIP BLANK
Lab Sample ID: 480-173244-11

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 101S
Date Collected: 07/29/20 09:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/04/20 21:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/04/20 21:40	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/04/20 21:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/04/20 21:40	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/04/20 21:40	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/04/20 21:40	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/04/20 21:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/04/20 21:40	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/04/20 21:40	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/04/20 21:40	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/04/20 21:40	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/04/20 21:40	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/04/20 21:40	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/04/20 21:40	1
2-Hexanone	ND		5.0	1.2	ug/L			08/04/20 21:40	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/04/20 21:40	1
Acetone	ND		10	3.0	ug/L			08/04/20 21:40	1
Benzene	ND		1.0	0.41	ug/L			08/04/20 21:40	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/04/20 21:40	1
Bromoform	ND		1.0	0.26	ug/L			08/04/20 21:40	1
Bromomethane	ND		1.0	0.69	ug/L			08/04/20 21:40	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/04/20 21:40	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/04/20 21:40	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/04/20 21:40	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/04/20 21:40	1
Chloroethane	ND		1.0	0.32	ug/L			08/04/20 21:40	1
Chloroform	ND		1.0	0.34	ug/L			08/04/20 21:40	1
Chloromethane	ND		1.0	0.35	ug/L			08/04/20 21:40	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/04/20 21:40	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/04/20 21:40	1
Cyclohexane	ND		1.0	0.18	ug/L			08/04/20 21:40	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/04/20 21:40	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/04/20 21:40	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/04/20 21:40	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/04/20 21:40	1
Methyl acetate	ND		2.5	1.3	ug/L			08/04/20 21:40	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/04/20 21:40	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/04/20 21:40	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/04/20 21:40	1
Styrene	ND		1.0	0.73	ug/L			08/04/20 21:40	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/04/20 21:40	1
Toluene	ND		1.0	0.51	ug/L			08/04/20 21:40	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/04/20 21:40	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/04/20 21:40	1
Trichloroethene	ND		1.0	0.46	ug/L			08/04/20 21:40	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/04/20 21:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/04/20 21:40	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/04/20 21:40	1

Client Sample ID: MW 101S
Date Collected: 07/29/20 09:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-1
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/04/20 21:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*08/04/20 21:40*	*1*
4-Bromofluorobenzene (Surr)	*95*		*73 - 120*		*08/04/20 21:40*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*08/04/20 21:40*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.75		1.75	0.88	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluoropentanoic acid (PFPeA)	1.75		1.75	0.55	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorohexanoic acid (PFHxA)	1.75		1.75	0.67	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluoroheptanoic acid (PFHpA)	1.75		1.75	0.80	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorooctanoic acid (PFOA)	**0.86**	**J**	1.75	0.71	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorononanoic acid (PFNA)	1.75		1.75	0.24	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorodecanoic acid (PFDA)	1.75		1.75	0.68	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluoroundecanoic acid (PFUnA)	1.75		1.75	0.68	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorododecanoic acid (PFDoA)	1.75		1.75	0.52	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorotridecanoic acid (PFTriA)	1.75		1.75	0.53	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorotetradecanoic acid (PFTeA)	1.75		1.75	0.81	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorobutanesulfonic acid (PFBS)	1.75		1.75	0.43	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorohexanesulfonic acid (PFHxS)	1.75		1.75	0.70	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.75		1.75	0.83	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorooctanesulfonic acid (PFOS)	**4.12**		1.75	0.53	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorodecanesulfonic acid (PFDS)	1.75		1.75	0.79	ng/L		08/06/20 09:27	08/07/20 17:46	1
Perfluorooctanesulfonamide (PFOSA)	8.77		8.77	8.77	ng/L		08/06/20 09:27	08/07/20 17:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.5		17.5	1.49	ng/L		08/06/20 09:27	08/07/20 17:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.5		17.5	1.32	ng/L		08/06/20 09:27	08/07/20 17:46	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.5		17.5	4.82	ng/L		08/06/20 09:27	08/07/20 17:46	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.5		17.5	2.54	ng/L		08/06/20 09:27	08/07/20 17:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	*80*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C4 PFHpA	*78*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C4 PFOA	*76*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C4 PFOS	*69*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C5 PFNA	*71*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C4 PFBA	*57*		*25 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C2 PFHxA	*79*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C2 PFDA	*72*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C2 PFUnA	*71*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C2 PFDoA	*76*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C8 FOSA	*47*		*25 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C5 PFPeA	*77*		*25 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
13C2 PFTeDA	*66*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
d3-NMeFOSAA	*66*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
d5-NEtFOSAA	*60*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*
M2-6:2 FTS	*80*		*25 - 150*	*08/06/20 09:27*	*08/07/20 17:46*	*1*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 101S
Date Collected: 07/29/20 09:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-1
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2 FTS	77		25 - 150	08/06/20 09:27	08/07/20 17:46	1
13C3 PFBS	83		50 - 150	08/06/20 09:27	08/07/20 17:46	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 103D
Date Collected: 07/29/20 09:20
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**800**		20	16	ug/L			08/04/20 22:05	20
1,1,2,2-Tetrachloroethane	ND		20	4.2	ug/L			08/04/20 22:05	20
1,1,2-Trichloroethane	ND		20	4.6	ug/L			08/04/20 22:05	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20	6.2	ug/L			08/04/20 22:05	20
1,1-Dichloroethane	**300**		20	7.6	ug/L			08/04/20 22:05	20
1,1-Dichloroethene	**130**		20	5.8	ug/L			08/04/20 22:05	20
1,2,4-Trichlorobenzene	ND		20	8.2	ug/L			08/04/20 22:05	20
1,2-Dibromo-3-Chloropropane	ND		20	7.8	ug/L			08/04/20 22:05	20
1,2-Dichlorobenzene	ND		20	16	ug/L			08/04/20 22:05	20
1,2-Dichloroethane	ND		20	4.2	ug/L			08/04/20 22:05	20
1,2-Dichloropropane	ND		20	14	ug/L			08/04/20 22:05	20
1,3-Dichlorobenzene	ND		20	16	ug/L			08/04/20 22:05	20
1,4-Dichlorobenzene	ND		20	17	ug/L			08/04/20 22:05	20
2-Butanone (MEK)	ND		200	26	ug/L			08/04/20 22:05	20
2-Hexanone	ND		100	25	ug/L			08/04/20 22:05	20
4-Methyl-2-pentanone (MIBK)	ND		100	42	ug/L			08/04/20 22:05	20
Acetone	ND		200	60	ug/L			08/04/20 22:05	20
Benzene	ND		20	8.2	ug/L			08/04/20 22:05	20
Bromodichloromethane	ND		20	7.8	ug/L			08/04/20 22:05	20
Bromoform	ND		20	5.2	ug/L			08/04/20 22:05	20
Bromomethane	ND		20	14	ug/L			08/04/20 22:05	20
Carbon disulfide	ND		20	3.8	ug/L			08/04/20 22:05	20
Carbon tetrachloride	ND		20	5.4	ug/L			08/04/20 22:05	20
Chlorobenzene	ND		20	15	ug/L			08/04/20 22:05	20
Dibromochloromethane	ND		20	6.4	ug/L			08/04/20 22:05	20
Chloroethane	**11**	**J**	20	6.4	ug/L			08/04/20 22:05	20
Chloroform	ND		20	6.8	ug/L			08/04/20 22:05	20
Chloromethane	ND		20	7.0	ug/L			08/04/20 22:05	20
cis-1,2-Dichloroethene	**270**		20	16	ug/L			08/04/20 22:05	20
cis-1,3-Dichloropropene	ND		20	7.2	ug/L			08/04/20 22:05	20
Cyclohexane	ND		20	3.6	ug/L			08/04/20 22:05	20
Dichlorodifluoromethane	ND		20	14	ug/L			08/04/20 22:05	20
Ethylbenzene	ND		20	15	ug/L			08/04/20 22:05	20
1,2-Dibromoethane	ND		20	15	ug/L			08/04/20 22:05	20
Isopropylbenzene	ND		20	16	ug/L			08/04/20 22:05	20
Methyl acetate	ND		50	26	ug/L			08/04/20 22:05	20
Methyl tert-butyl ether	ND		20	3.2	ug/L			08/04/20 22:05	20
Methylcyclohexane	ND		20	3.2	ug/L			08/04/20 22:05	20
Methylene Chloride	ND		20	8.8	ug/L			08/04/20 22:05	20
Styrene	ND		20	15	ug/L			08/04/20 22:05	20
Tetrachloroethene	ND		20	7.2	ug/L			08/04/20 22:05	20
Toluene	ND		20	10	ug/L			08/04/20 22:05	20
trans-1,2-Dichloroethene	ND		20	18	ug/L			08/04/20 22:05	20
trans-1,3-Dichloropropene	ND		20	7.4	ug/L			08/04/20 22:05	20
Trichloroethene	**1300**		20	9.2	ug/L			08/04/20 22:05	20
Trichlorofluoromethane	ND		20	18	ug/L			08/04/20 22:05	20
Vinyl chloride	ND		20	18	ug/L			08/04/20 22:05	20
Xylenes, Total	ND		40	13	ug/L			08/04/20 22:05	20

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 103D
Date Collected: 07/29/20 09:20
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		08/04/20 22:05	20
1,2-Dichloroethane-d4 (Surr)	108		77 - 120		08/04/20 22:05	20
4-Bromofluorobenzene (Surr)	102		73 - 120		08/04/20 22:05	20
Dibromofluoromethane (Surr)	107		75 - 123		08/04/20 22:05	20

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 104S
Date Collected: 07/29/20 10:15
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/04/20 22:30	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/04/20 22:30	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/04/20 22:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/04/20 22:30	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/04/20 22:30	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/04/20 22:30	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/04/20 22:30	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/04/20 22:30	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/04/20 22:30	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/04/20 22:30	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/04/20 22:30	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/04/20 22:30	1
1,4-Dichlorobenzene	**2.9**		1.0	0.84	ug/L			08/04/20 22:30	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/04/20 22:30	1
2-Hexanone	ND		5.0	1.2	ug/L			08/04/20 22:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/04/20 22:30	1
Acetone	**3.5**	**J**	10	3.0	ug/L			08/04/20 22:30	1
Benzene	**4.2**		1.0	0.41	ug/L			08/04/20 22:30	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/04/20 22:30	1
Bromoform	ND		1.0	0.26	ug/L			08/04/20 22:30	1
Bromomethane	ND		1.0	0.69	ug/L			08/04/20 22:30	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/04/20 22:30	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/04/20 22:30	1
Chlorobenzene	**4.9**		1.0	0.75	ug/L			08/04/20 22:30	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/04/20 22:30	1
Chloroethane	ND		1.0	0.32	ug/L			08/04/20 22:30	1
Chloroform	ND		1.0	0.34	ug/L			08/04/20 22:30	1
Chloromethane	ND		1.0	0.35	ug/L			08/04/20 22:30	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/04/20 22:30	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/04/20 22:30	1
Cyclohexane	ND		1.0	0.18	ug/L			08/04/20 22:30	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/04/20 22:30	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/04/20 22:30	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/04/20 22:30	1
Isopropylbenzene	**2.0**		1.0	0.79	ug/L			08/04/20 22:30	1
Methyl acetate	ND		2.5	1.3	ug/L			08/04/20 22:30	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/04/20 22:30	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/04/20 22:30	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/04/20 22:30	1
Styrene	ND		1.0	0.73	ug/L			08/04/20 22:30	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/04/20 22:30	1
Toluene	ND		1.0	0.51	ug/L			08/04/20 22:30	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/04/20 22:30	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/04/20 22:30	1
Trichloroethene	ND		1.0	0.46	ug/L			08/04/20 22:30	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/04/20 22:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/04/20 22:30	1
Xylenes, Total	**44**		2.0	0.66	ug/L			08/04/20 22:30	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 104S
Date Collected: 07/29/20 10:15
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-3
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		08/04/20 22:30	1
1,2-Dichloroethane-d4 (Surr)	107		77 - 120		08/04/20 22:30	1
4-Bromofluorobenzene (Surr)	100		73 - 120		08/04/20 22:30	1
Dibromofluoromethane (Surr)	105		75 - 123		08/04/20 22:30	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 107S
Date Collected: 07/28/20 11:40
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		20	16	ug/L			08/04/20 22:55	20
1,1,2,2-Tetrachloroethane	ND		20	4.2	ug/L			08/04/20 22:55	20
1,1,2-Trichloroethane	ND		20	4.6	ug/L			08/04/20 22:55	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20	6.2	ug/L			08/04/20 22:55	20
1,1-Dichloroethane	ND		20	7.6	ug/L			08/04/20 22:55	20
1,1-Dichloroethene	ND		20	5.8	ug/L			08/04/20 22:55	20
1,2,4-Trichlorobenzene	ND		20	8.2	ug/L			08/04/20 22:55	20
1,2-Dibromo-3-Chloropropane	ND		20	7.8	ug/L			08/04/20 22:55	20
1,2-Dichlorobenzene	ND		20	16	ug/L			08/04/20 22:55	20
1,2-Dichloroethane	ND		20	4.2	ug/L			08/04/20 22:55	20
1,2-Dichloropropane	ND		20	14	ug/L			08/04/20 22:55	20
1,3-Dichlorobenzene	ND		20	16	ug/L			08/04/20 22:55	20
1,4-Dichlorobenzene	ND		20	17	ug/L			08/04/20 22:55	20
2-Butanone (MEK)	ND		200	26	ug/L			08/04/20 22:55	20
2-Hexanone	ND		100	25	ug/L			08/04/20 22:55	20
4-Methyl-2-pentanone (MIBK)	ND		100	42	ug/L			08/04/20 22:55	20
Acetone	ND		200	60	ug/L			08/04/20 22:55	20
Benzene	ND		20	8.2	ug/L			08/04/20 22:55	20
Bromodichloromethane	ND		20	7.8	ug/L			08/04/20 22:55	20
Bromoform	ND		20	5.2	ug/L			08/04/20 22:55	20
Bromomethane	ND		20	14	ug/L			08/04/20 22:55	20
Carbon disulfide	ND		20	3.8	ug/L			08/04/20 22:55	20
Carbon tetrachloride	ND		20	5.4	ug/L			08/04/20 22:55	20
Chlorobenzene	ND		20	15	ug/L			08/04/20 22:55	20
Dibromochloromethane	ND		20	6.4	ug/L			08/04/20 22:55	20
Chloroethane	ND		20	6.4	ug/L			08/04/20 22:55	20
Chloroform	ND		20	6.8	ug/L			08/04/20 22:55	20
Chloromethane	ND		20	7.0	ug/L			08/04/20 22:55	20
cis-1,2-Dichloroethene	**740**		20	16	ug/L			08/04/20 22:55	20
cis-1,3-Dichloropropene	ND		20	7.2	ug/L			08/04/20 22:55	20
Cyclohexane	ND		20	3.6	ug/L			08/04/20 22:55	20
Dichlorodifluoromethane	ND		20	14	ug/L			08/04/20 22:55	20
Ethylbenzene	ND		20	15	ug/L			08/04/20 22:55	20
1,2-Dibromoethane	ND		20	15	ug/L			08/04/20 22:55	20
Isopropylbenzene	ND		20	16	ug/L			08/04/20 22:55	20
Methyl acetate	ND		50	26	ug/L			08/04/20 22:55	20
Methyl tert-butyl ether	ND		20	3.2	ug/L			08/04/20 22:55	20
Methylcyclohexane	ND		20	3.2	ug/L			08/04/20 22:55	20
Methylene Chloride	ND		20	8.8	ug/L			08/04/20 22:55	20
Styrene	ND		20	15	ug/L			08/04/20 22:55	20
Tetrachloroethene	ND		20	7.2	ug/L			08/04/20 22:55	20
Toluene	ND		20	10	ug/L			08/04/20 22:55	20
trans-1,2-Dichloroethene	ND		20	18	ug/L			08/04/20 22:55	20
trans-1,3-Dichloropropene	ND		20	7.4	ug/L			08/04/20 22:55	20
Trichloroethene	**14**	**J**	20	9.2	ug/L			08/04/20 22:55	20
Trichlorofluoromethane	ND		20	18	ug/L			08/04/20 22:55	20
Vinyl chloride	**360**		20	18	ug/L			08/04/20 22:55	20
Xylenes, Total	ND		40	13	ug/L			08/04/20 22:55	20

Client Sample ID: MW 107S
Date Collected: 07/28/20 11:40
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-4
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/04/20 22:55*	*20*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*08/04/20 22:55*	*20*
4-Bromofluorobenzene (Surr)	*91*		*73 - 120*		*08/04/20 22:55*	*20*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*08/04/20 22:55*	*20*

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**3.4**	**E**	0.40	0.20	ug/L		08/04/20 15:10	08/05/20 22:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*47*		*15 - 110*	*08/04/20 15:10*	*08/05/20 22:43*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.50**		1.75	0.87	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluoropentanoic acid (PFPeA)	**9.88**		1.75	0.55	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorohexanoic acid (PFHxA)	**7.59**		1.75	0.66	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluoroheptanoic acid (PFHpA)	**2.21**		1.75	0.80	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorooctanoic acid (PFOA)	**4.54**		1.75	0.71	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorononanoic acid (PFNA)	1.75		1.75	0.24	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorodecanoic acid (PFDA)	1.75		1.75	0.67	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluoroundecanoic acid (PFUnA)	1.75		1.75	0.68	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorododecanoic acid (PFDoA)	1.75		1.75	0.52	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorotridecanoic acid (PFTriA)	1.75		1.75	0.52	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorotetradecanoic acid (PFTeA)	1.75		1.75	0.80	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorobutanesulfonic acid (PFBS)	**0.81**	**J**	1.75	0.43	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorohexanesulfonic acid (PFHxS)	1.75		1.75	0.70	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.75		1.75	0.83	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorooctanesulfonic acid (PFOS)	**0.98**	**J**	1.75	0.53	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorodecanesulfonic acid (PFDS)	1.75		1.75	0.79	ng/L		08/06/20 09:27	08/07/20 17:54	1
Perfluorooctanesulfonamide (PFOSA)	8.75		8.75	8.75	ng/L		08/06/20 09:27	08/07/20 17:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.5		17.5	1.49	ng/L		08/06/20 09:27	08/07/20 17:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.5		17.5	1.31	ng/L		08/06/20 09:27	08/07/20 17:54	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.5		17.5	4.81	ng/L		08/06/20 09:27	08/07/20 17:54	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.5		17.5	2.54	ng/L		08/06/20 09:27	08/07/20 17:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*75*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C4 PFHpA	*78*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C4 PFOA	*76*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C4 PFOS	*66*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C5 PFNA	*68*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C4 PFBA	*77*		*25 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C2 PFHxA	*81*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C2 PFDA	*79*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C2 PFUnA	*76*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*
13C2 PFDoA	*80*		*50 - 150*	*08/06/20 09:27*	*08/07/20 17:54*	*1*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 107S
Date Collected: 07/28/20 11:40
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-4
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	54		25 - 150	08/06/20 09:27	08/07/20 17:54	1
13C5 PFPeA	78		25 - 150	08/06/20 09:27	08/07/20 17:54	1
13C2 PFTeDA	67		50 - 150	08/06/20 09:27	08/07/20 17:54	1
d3-NMeFOSAA	67		50 - 150	08/06/20 09:27	08/07/20 17:54	1
d5-NEtFOSAA	63		50 - 150	08/06/20 09:27	08/07/20 17:54	1
M2-6:2 FTS	73		25 - 150	08/06/20 09:27	08/07/20 17:54	1
M2-8:2 FTS	88		25 - 150	08/06/20 09:27	08/07/20 17:54	1
13C3 PFBS	81		50 - 150	08/06/20 09:27	08/07/20 17:54	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 107D
Date Collected: 07/28/20 12:10
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/04/20 23:20	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/04/20 23:20	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/04/20 23:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/04/20 23:20	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/04/20 23:20	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/04/20 23:20	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/04/20 23:20	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/04/20 23:20	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/04/20 23:20	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/04/20 23:20	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/04/20 23:20	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/04/20 23:20	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/04/20 23:20	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/04/20 23:20	1
2-Hexanone	ND		5.0	1.2	ug/L			08/04/20 23:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/04/20 23:20	1
Acetone	ND		10	3.0	ug/L			08/04/20 23:20	1
Benzene	ND	F2	1.0	0.41	ug/L			08/04/20 23:20	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/04/20 23:20	1
Bromoform	ND		1.0	0.26	ug/L			08/04/20 23:20	1
Bromomethane	ND		1.0	0.69	ug/L			08/04/20 23:20	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/04/20 23:20	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/04/20 23:20	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/04/20 23:20	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/04/20 23:20	1
Chloroethane	ND		1.0	0.32	ug/L			08/04/20 23:20	1
Chloroform	ND		1.0	0.34	ug/L			08/04/20 23:20	1
Chloromethane	ND		1.0	0.35	ug/L			08/04/20 23:20	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/04/20 23:20	1
cis-1,3-Dichloropropene	ND	F2	1.0	0.36	ug/L			08/04/20 23:20	1
Cyclohexane	ND		1.0	0.18	ug/L			08/04/20 23:20	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/04/20 23:20	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/04/20 23:20	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/04/20 23:20	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/04/20 23:20	1
Methyl acetate	ND		2.5	1.3	ug/L			08/04/20 23:20	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/04/20 23:20	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/04/20 23:20	1
Methylene Chloride	ND	F2	1.0	0.44	ug/L			08/04/20 23:20	1
Styrene	ND		1.0	0.73	ug/L			08/04/20 23:20	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/04/20 23:20	1
Toluene	ND		1.0	0.51	ug/L			08/04/20 23:20	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/04/20 23:20	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/04/20 23:20	1
Trichloroethene	ND		1.0	0.46	ug/L			08/04/20 23:20	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/04/20 23:20	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/04/20 23:20	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/04/20 23:20	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 107D
Date Collected: 07/28/20 12:10
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		08/04/20 23:20	1
1,2-Dichloroethane-d4 (Surr)	109		77 - 120		08/04/20 23:20	1
4-Bromofluorobenzene (Surr)	101		73 - 120		08/04/20 23:20	1
Dibromofluoromethane (Surr)	106		75 - 123		08/04/20 23:20	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 108S
Date Collected: 07/28/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/04/20 23:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/04/20 23:45	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/04/20 23:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/04/20 23:45	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/04/20 23:45	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/04/20 23:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/04/20 23:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/04/20 23:45	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/04/20 23:45	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/04/20 23:45	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/04/20 23:45	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/04/20 23:45	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/04/20 23:45	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/04/20 23:45	1
2-Hexanone	ND		5.0	1.2	ug/L			08/04/20 23:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/04/20 23:45	1
Acetone	ND		10	3.0	ug/L			08/04/20 23:45	1
Benzene	ND		1.0	0.41	ug/L			08/04/20 23:45	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/04/20 23:45	1
Bromoform	ND		1.0	0.26	ug/L			08/04/20 23:45	1
Bromomethane	ND		1.0	0.69	ug/L			08/04/20 23:45	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/04/20 23:45	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/04/20 23:45	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/04/20 23:45	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/04/20 23:45	1
Chloroethane	ND		1.0	0.32	ug/L			08/04/20 23:45	1
Chloroform	ND		1.0	0.34	ug/L			08/04/20 23:45	1
Chloromethane	ND		1.0	0.35	ug/L			08/04/20 23:45	1
cis-1,2-Dichloroethene	**6.3**		1.0	0.81	ug/L			08/04/20 23:45	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/04/20 23:45	1
Cyclohexane	ND		1.0	0.18	ug/L			08/04/20 23:45	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/04/20 23:45	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/04/20 23:45	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/04/20 23:45	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/04/20 23:45	1
Methyl acetate	ND		2.5	1.3	ug/L			08/04/20 23:45	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/04/20 23:45	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/04/20 23:45	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/04/20 23:45	1
Styrene	ND		1.0	0.73	ug/L			08/04/20 23:45	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/04/20 23:45	1
Toluene	ND		1.0	0.51	ug/L			08/04/20 23:45	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/04/20 23:45	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/04/20 23:45	1
Trichloroethene	**5.7**		1.0	0.46	ug/L			08/04/20 23:45	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/04/20 23:45	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/04/20 23:45	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/04/20 23:45	1

Client Sample ID: MW 108S
Date Collected: 07/28/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-6
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/04/20 23:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*08/04/20 23:45*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*08/04/20 23:45*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 123*		*08/04/20 23:45*	*1*

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.52**		0.40	0.20	ug/L		08/04/20 15:10	08/05/20 23:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*47*		*15 - 110*	*08/04/20 15:10*	*08/05/20 23:06*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.32**		1.90	0.95	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluoropentanoic acid (PFPeA)	**3.18**		1.90	0.60	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorohexanoic acid (PFHxA)	**3.89**		1.90	0.72	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluoroheptanoic acid (PFHpA)	**2.98**		1.90	0.87	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorooctanoic acid (PFOA)	**26.4**		1.90	0.77	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorononanoic acid (PFNA)	**0.93**	**J**	1.90	0.26	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorodecanoic acid (PFDA)	1.90		1.90	0.73	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluoroundecanoic acid (PFUnA)	1.90		1.90	0.74	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorododecanoic acid (PFDoA)	1.90		1.90	0.56	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorotridecanoic acid (PFTriA)	1.90		1.90	0.57	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorotetradecanoic acid (PFTeA)	1.90		1.90	0.88	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorobutanesulfonic acid (PFBS)	**2.77**		1.90	0.47	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorohexanesulfonic acid (PFHxS)	**6.14**		1.90	0.76	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	**1.92**		1.90	0.90	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorooctanesulfonic acid (PFOS)	**50.5**		1.90	0.58	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorodecanesulfonic acid (PFDS)	1.90		1.90	0.86	ng/L		08/06/20 09:27	08/07/20 18:11	1
Perfluorooctanesulfonamide (PFOSA)	9.52		9.52	9.52	ng/L		08/06/20 09:27	08/07/20 18:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.0		19.0	1.62	ng/L		08/06/20 09:27	08/07/20 18:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0		19.0	1.43	ng/L		08/06/20 09:27	08/07/20 18:11	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	19.0		19.0	5.23	ng/L		08/06/20 09:27	08/07/20 18:11	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	19.0		19.0	2.76	ng/L		08/06/20 09:27	08/07/20 18:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*79*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C4 PFHpA	*81*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C4 PFOA	*79*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C4 PFOS	*69*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C5 PFNA	*68*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C4 PFBA	*69*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C2 PFHxA	*84*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C2 PFDA	*74*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*
13C2 PFUnA	*83*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:11*	*1*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 108S
Date Collected: 07/28/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-6
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	89		50 - 150	08/06/20 09:27	08/07/20 18:11	1
13C8 FOSA	58		25 - 150	08/06/20 09:27	08/07/20 18:11	1
13C5 PFPeA	79		25 - 150	08/06/20 09:27	08/07/20 18:11	1
13C2 PFTeDA	83		50 - 150	08/06/20 09:27	08/07/20 18:11	1
d3-NMeFOSAA	60		50 - 150	08/06/20 09:27	08/07/20 18:11	1
d5-NEtFOSAA	62		50 - 150	08/06/20 09:27	08/07/20 18:11	1
M2-6:2 FTS	78		25 - 150	08/06/20 09:27	08/07/20 18:11	1
M2-8:2 FTS	87		25 - 150	08/06/20 09:27	08/07/20 18:11	1
13C3 PFBS	72		50 - 150	08/06/20 09:27	08/07/20 18:11	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 108I
Date Collected: 07/28/20 13:05
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/05/20 00:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/05/20 00:09	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/05/20 00:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/05/20 00:09	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/05/20 00:09	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/05/20 00:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/05/20 00:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/05/20 00:09	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/05/20 00:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/05/20 00:09	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/05/20 00:09	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/05/20 00:09	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/05/20 00:09	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/05/20 00:09	1
2-Hexanone	ND		5.0	1.2	ug/L			08/05/20 00:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/05/20 00:09	1
Acetone	ND		10	3.0	ug/L			08/05/20 00:09	1
Benzene	ND		1.0	0.41	ug/L			08/05/20 00:09	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/05/20 00:09	1
Bromoform	ND		1.0	0.26	ug/L			08/05/20 00:09	1
Bromomethane	ND		1.0	0.69	ug/L			08/05/20 00:09	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/05/20 00:09	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/05/20 00:09	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/05/20 00:09	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/05/20 00:09	1
Chloroethane	ND		1.0	0.32	ug/L			08/05/20 00:09	1
Chloroform	ND		1.0	0.34	ug/L			08/05/20 00:09	1
Chloromethane	ND		1.0	0.35	ug/L			08/05/20 00:09	1
cis-1,2-Dichloroethene	**4.2**		1.0	0.81	ug/L			08/05/20 00:09	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/05/20 00:09	1
Cyclohexane	ND		1.0	0.18	ug/L			08/05/20 00:09	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/05/20 00:09	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/05/20 00:09	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/05/20 00:09	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/05/20 00:09	1
Methyl acetate	ND		2.5	1.3	ug/L			08/05/20 00:09	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/05/20 00:09	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/05/20 00:09	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/05/20 00:09	1
Styrene	ND		1.0	0.73	ug/L			08/05/20 00:09	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/05/20 00:09	1
Toluene	ND		1.0	0.51	ug/L			08/05/20 00:09	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/05/20 00:09	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/05/20 00:09	1
Trichloroethene	**8.3**		1.0	0.46	ug/L			08/05/20 00:09	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/05/20 00:09	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/05/20 00:09	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/05/20 00:09	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 108I
Date Collected: 07/28/20 13:05
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-7
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		08/05/20 00:09	1
1,2-Dichloroethane-d4 (Surr)	108		77 - 120		08/05/20 00:09	1
4-Bromofluorobenzene (Surr)	100		73 - 120		08/05/20 00:09	1
Dibromofluoromethane (Surr)	104		75 - 123		08/05/20 00:09	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 202S
Date Collected: 07/29/20 10:53
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.0	3.3	ug/L			08/05/20 00:34	4
1,1,2,2-Tetrachloroethane	ND		4.0	0.84	ug/L			08/05/20 00:34	4
1,1,2-Trichloroethane	ND		4.0	0.92	ug/L			08/05/20 00:34	4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		4.0	1.2	ug/L			08/05/20 00:34	4
1,1-Dichloroethane	ND		4.0	1.5	ug/L			08/05/20 00:34	4
1,1-Dichloroethene	ND		4.0	1.2	ug/L			08/05/20 00:34	4
1,2,4-Trichlorobenzene	ND		4.0	1.6	ug/L			08/05/20 00:34	4
1,2-Dibromo-3-Chloropropane	ND		4.0	1.6	ug/L			08/05/20 00:34	4
1,2-Dichlorobenzene	ND		4.0	3.2	ug/L			08/05/20 00:34	4
1,2-Dichloroethane	ND		4.0	0.84	ug/L			08/05/20 00:34	4
1,2-Dichloropropane	ND		4.0	2.9	ug/L			08/05/20 00:34	4
1,3-Dichlorobenzene	ND		4.0	3.1	ug/L			08/05/20 00:34	4
1,4-Dichlorobenzene	ND		4.0	3.4	ug/L			08/05/20 00:34	4
2-Butanone (MEK)	ND		40	5.3	ug/L			08/05/20 00:34	4
2-Hexanone	ND		20	5.0	ug/L			08/05/20 00:34	4
4-Methyl-2-pentanone (MIBK)	ND		20	8.4	ug/L			08/05/20 00:34	4
Acetone	ND		40	12	ug/L			08/05/20 00:34	4
Benzene	ND		4.0	1.6	ug/L			08/05/20 00:34	4
Bromodichloromethane	ND		4.0	1.6	ug/L			08/05/20 00:34	4
Bromoform	ND		4.0	1.0	ug/L			08/05/20 00:34	4
Bromomethane	ND		4.0	2.8	ug/L			08/05/20 00:34	4
Carbon disulfide	ND		4.0	0.76	ug/L			08/05/20 00:34	4
Carbon tetrachloride	ND		4.0	1.1	ug/L			08/05/20 00:34	4
Chlorobenzene	ND		4.0	3.0	ug/L			08/05/20 00:34	4
Dibromochloromethane	ND		4.0	1.3	ug/L			08/05/20 00:34	4
Chloroethane	ND		4.0	1.3	ug/L			08/05/20 00:34	4
Chloroform	ND		4.0	1.4	ug/L			08/05/20 00:34	4
Chloromethane	ND		4.0	1.4	ug/L			08/05/20 00:34	4
cis-1,2-Dichloroethene	**54**		4.0	3.2	ug/L			08/05/20 00:34	4
cis-1,3-Dichloropropene	ND		4.0	1.4	ug/L			08/05/20 00:34	4
Cyclohexane	ND		4.0	0.72	ug/L			08/05/20 00:34	4
Dichlorodifluoromethane	ND		4.0	2.7	ug/L			08/05/20 00:34	4
Ethylbenzene	ND		4.0	3.0	ug/L			08/05/20 00:34	4
1,2-Dibromoethane	ND		4.0	2.9	ug/L			08/05/20 00:34	4
Isopropylbenzene	ND		4.0	3.2	ug/L			08/05/20 00:34	4
Methyl acetate	ND		10	5.2	ug/L			08/05/20 00:34	4
Methyl tert-butyl ether	ND		4.0	0.64	ug/L			08/05/20 00:34	4
Methylcyclohexane	ND		4.0	0.64	ug/L			08/05/20 00:34	4
Methylene Chloride	ND		4.0	1.8	ug/L			08/05/20 00:34	4
Styrene	ND		4.0	2.9	ug/L			08/05/20 00:34	4
Tetrachloroethene	ND		4.0	1.4	ug/L			08/05/20 00:34	4
Toluene	ND		4.0	2.0	ug/L			08/05/20 00:34	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			08/05/20 00:34	4
trans-1,3-Dichloropropene	ND		4.0	1.5	ug/L			08/05/20 00:34	4
Trichloroethene	**91**		4.0	1.8	ug/L			08/05/20 00:34	4
Trichlorofluoromethane	ND		4.0	3.5	ug/L			08/05/20 00:34	4
Vinyl chloride	ND		4.0	3.6	ug/L			08/05/20 00:34	4
Xylenes, Total	ND		8.0	2.6	ug/L			08/05/20 00:34	4

Client Sample ID: MW 202S
Lab Sample ID: 480-173244-8

Date Collected: 07/29/20 10:53
Matrix: Water
Date Received: 07/30/20 14:42

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/05/20 00:34*	*4*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*08/05/20 00:34*	*4*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*08/05/20 00:34*	*4*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*08/05/20 00:34*	*4*

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.24**	**J**	0.40	0.20	ug/L		08/04/20 15:10	08/05/20 21:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*47*		*15 - 110*	*08/04/20 15:10*	*08/05/20 21:58*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.73		1.73	0.86	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluoropentanoic acid (PFPeA)	**0.77**	**J**	1.73	0.54	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorohexanoic acid (PFHxA)	**0.72**	**J**	1.73	0.66	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluoroheptanoic acid (PFHpA)	1.73		1.73	0.79	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorooctanoic acid (PFOA)	**1.92**		1.73	0.70	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorononanoic acid (PFNA)	1.73		1.73	0.23	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorodecanoic acid (PFDA)	1.73		1.73	0.66	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluoroundecanoic acid (PFUnA)	1.73		1.73	0.67	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorododecanoic acid (PFDoA)	1.73		1.73	0.51	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorotridecanoic acid (PFTriA)	1.73		1.73	0.52	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorotetradecanoic acid (PFTeA)	1.73		1.73	0.79	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorobutanesulfonic acid (PFBS)	1.73		1.73	0.42	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorohexanesulfonic acid (PFHxS)	1.73		1.73	0.69	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.73		1.73	0.82	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorooctanesulfonic acid (PFOS)	**0.60**	**J F2**	1.73	0.53	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorodecanesulfonic acid (PFDS)	1.73		1.73	0.78	ng/L		08/06/20 09:27	08/07/20 18:19	1
Perfluorooctanesulfonamide (PFOSA)	8.63		8.63	8.63	ng/L		08/06/20 09:27	08/07/20 18:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.3		17.3	1.47	ng/L		08/06/20 09:27	08/07/20 18:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.3		17.3	1.29	ng/L		08/06/20 09:27	08/07/20 18:19	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.3		17.3	4.75	ng/L		08/06/20 09:27	08/07/20 18:19	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.3		17.3	2.50	ng/L		08/06/20 09:27	08/07/20 18:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*85*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C4 PFHpA	*82*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C4 PFOA	*80*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C4 PFOS	*71*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C5 PFNA	*82*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C4 PFBA	*61*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C2 PFHxA	*86*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C2 PFDA	*76*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C2 PFUnA	*65*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*
13C2 PFDoA	*68*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:19*	*1*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 202S
Date Collected: 07/29/20 10:53
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-8
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	62		25 - 150	08/06/20 09:27	08/07/20 18:19	1
13C5 PFPeA	80		25 - 150	08/06/20 09:27	08/07/20 18:19	1
13C2 PFTeDA	65		50 - 150	08/06/20 09:27	08/07/20 18:19	1
d3-NMeFOSAA	55		50 - 150	08/06/20 09:27	08/07/20 18:19	1
d5-NEtFOSAA	64		50 - 150	08/06/20 09:27	08/07/20 18:19	1
M2-6:2 FTS	74		25 - 150	08/06/20 09:27	08/07/20 18:19	1
M2-8:2 FTS	73		25 - 150	08/06/20 09:27	08/07/20 18:19	1
13C3 PFBS	78		50 - 150	08/06/20 09:27	08/07/20 18:19	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: BLIND DUP
Date Collected: 07/28/20 12:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-9
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/05/20 00:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/05/20 00:59	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/05/20 00:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/05/20 00:59	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/05/20 00:59	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/05/20 00:59	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/05/20 00:59	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/05/20 00:59	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/05/20 00:59	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/05/20 00:59	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/05/20 00:59	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/05/20 00:59	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/05/20 00:59	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/05/20 00:59	1
2-Hexanone	ND		5.0	1.2	ug/L			08/05/20 00:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/05/20 00:59	1
Acetone	ND		10	3.0	ug/L			08/05/20 00:59	1
Benzene	ND		1.0	0.41	ug/L			08/05/20 00:59	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/05/20 00:59	1
Bromoform	ND		1.0	0.26	ug/L			08/05/20 00:59	1
Bromomethane	ND		1.0	0.69	ug/L			08/05/20 00:59	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/05/20 00:59	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/05/20 00:59	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/05/20 00:59	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/05/20 00:59	1
Chloroethane	ND		1.0	0.32	ug/L			08/05/20 00:59	1
Chloroform	ND		1.0	0.34	ug/L			08/05/20 00:59	1
Chloromethane	ND		1.0	0.35	ug/L			08/05/20 00:59	1
cis-1,2-Dichloroethene	**6.1**		1.0	0.81	ug/L			08/05/20 00:59	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/05/20 00:59	1
Cyclohexane	ND		1.0	0.18	ug/L			08/05/20 00:59	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/05/20 00:59	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/05/20 00:59	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/05/20 00:59	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/05/20 00:59	1
Methyl acetate	ND		2.5	1.3	ug/L			08/05/20 00:59	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/05/20 00:59	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/05/20 00:59	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/05/20 00:59	1
Styrene	ND		1.0	0.73	ug/L			08/05/20 00:59	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/05/20 00:59	1
Toluene	ND		1.0	0.51	ug/L			08/05/20 00:59	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/05/20 00:59	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/05/20 00:59	1
Trichloroethene	**5.4**		1.0	0.46	ug/L			08/05/20 00:59	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/05/20 00:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/05/20 00:59	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/05/20 00:59	1

Client Sample ID: BLIND DUP
Lab Sample ID: 480-173244-9

Date Collected: 07/28/20 12:00
Matrix: Water
Date Received: 07/30/20 14:42

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/05/20 00:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*77 - 120*		*08/05/20 00:59*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*08/05/20 00:59*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*08/05/20 00:59*	*1*

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.53**		0.40	0.20	ug/L		08/04/20 15:10	08/05/20 23:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*43*		*15 - 110*	*08/04/20 15:10*	*08/05/20 23:29*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.21**		1.78	0.89	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluoropentanoic acid (PFPeA)	**3.05**		1.78	0.56	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorohexanoic acid (PFHxA)	**3.27**		1.78	0.68	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluoroheptanoic acid (PFHpA)	**2.92**		1.78	0.81	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorooctanoic acid (PFOA)	**26.8**		1.78	0.72	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorononanoic acid (PFNA)	**0.62**	**J**	1.78	0.24	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorodecanoic acid (PFDA)	1.78		1.78	0.69	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluoroundecanoic acid (PFUnA)	1.78		1.78	0.69	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorododecanoic acid (PFDoA)	1.78		1.78	0.53	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorotridecanoic acid (PFTriA)	1.78		1.78	0.53	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorotetradecanoic acid (PFTeA)	1.78		1.78	0.82	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorobutanesulfonic acid (PFBS)	**2.62**		1.78	0.44	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorohexanesulfonic acid (PFHxS)	**5.97**		1.78	0.71	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.15**		1.78	0.85	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorooctanesulfonic acid (PFOS)	**56.7**		1.78	0.54	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorodecanesulfonic acid (PFDS)	1.78		1.78	0.80	ng/L		08/06/20 09:27	08/07/20 18:44	1
Perfluorooctanesulfonamide (PFOSA)	8.90		8.90	8.90	ng/L		08/06/20 09:27	08/07/20 18:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.8		17.8	1.51	ng/L		08/06/20 09:27	08/07/20 18:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.8		17.8	1.33	ng/L		08/06/20 09:27	08/07/20 18:44	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.8		17.8	4.89	ng/L		08/06/20 09:27	08/07/20 18:44	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.8		17.8	2.58	ng/L		08/06/20 09:27	08/07/20 18:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*77*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C4 PFHpA	*80*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C4 PFOA	*78*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C4 PFOS	*63*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C5 PFNA	*76*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C4 PFBA	*68*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C2 PFHxA	*84*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C2 PFDA	*80*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*
13C2 PFUnA	*75*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:44*	*1*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: BLIND DUP
Date Collected: 07/28/20 12:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-9
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	78		50 - 150	08/06/20 09:27	08/07/20 18:44	1
13C8 FOSA	64		25 - 150	08/06/20 09:27	08/07/20 18:44	1
13C5 PFPeA	77		25 - 150	08/06/20 09:27	08/07/20 18:44	1
13C2 PFTeDA	79		50 - 150	08/06/20 09:27	08/07/20 18:44	1
d3-NMeFOSAA	66		50 - 150	08/06/20 09:27	08/07/20 18:44	1
d5-NEtFOSAA	60		50 - 150	08/06/20 09:27	08/07/20 18:44	1
M2-6:2 FTS	88		25 - 150	08/06/20 09:27	08/07/20 18:44	1
M2-8:2 FTS	95		25 - 150	08/06/20 09:27	08/07/20 18:44	1
13C3 PFBS	76		50 - 150	08/06/20 09:27	08/07/20 18:44	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: EQUIP BLANK

Date Collected: 07/29/20 10:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-10

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.57	0.29	ug/L		08/04/20 15:10	08/05/20 23:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*55*		*15 - 110*	*08/04/20 15:10*	*08/05/20 23:51*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.73		1.73	0.86	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluoropentanoic acid (PFPeA)	1.73		1.73	0.54	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorohexanoic acid (PFHxA)	1.73		1.73	0.66	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluoroheptanoic acid (PFHpA)	1.73		1.73	0.79	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorooctanoic acid (PFOA)	1.73		1.73	0.70	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorononanoic acid (PFNA)	1.73		1.73	0.23	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorodecanoic acid (PFDA)	1.73		1.73	0.66	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluoroundecanoic acid (PFUnA)	1.73		1.73	0.67	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorododecanoic acid (PFDoA)	1.73		1.73	0.51	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorotridecanoic acid (PFTriA)	1.73		1.73	0.52	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorotetradecanoic acid (PFTeA)	1.73		1.73	0.79	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorobutanesulfonic acid (PFBS)	1.73		1.73	0.42	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorohexanesulfonic acid (PFHxS)	1.73		1.73	0.69	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.73		1.73	0.82	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorooctanesulfonic acid (PFOS)	1.73		1.73	0.53	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorodecanesulfonic acid (PFDS)	1.73		1.73	0.78	ng/L		08/06/20 09:27	08/07/20 18:52	1
Perfluorooctanesulfonamide (PFOSA)	8.63		8.63	8.63	ng/L		08/06/20 09:27	08/07/20 18:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.3		17.3	1.47	ng/L		08/06/20 09:27	08/07/20 18:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.3		17.3	1.29	ng/L		08/06/20 09:27	08/07/20 18:52	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.3		17.3	4.74	ng/L		08/06/20 09:27	08/07/20 18:52	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.3		17.3	2.50	ng/L		08/06/20 09:27	08/07/20 18:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*71*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C4 PFHpA	*78*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C4 PFOA	*86*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C4 PFOS	*52*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C5 PFNA	*81*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C4 PFBA	*81*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C2 PFHxA	*82*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C2 PFDA	*69*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C2 PFUnA	*68*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C2 PFDoA	*66*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C8 FOSA	*40*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C5 PFPeA	*93*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
13C2 PFTeDA	*63*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
d3-NMeFOSAA	*66*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
d5-NEtFOSAA	*51*		*50 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
M2-6:2 FTS	*91*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*
M2-8:2 FTS	*97*		*25 - 150*	*08/06/20 09:27*	*08/07/20 18:52*	*1*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: EQUIP BLANK
Date Collected: 07/29/20 10:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-10
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	71		50 - 150	08/06/20 09:27	08/07/20 18:52	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: TRIP BLANK

Date Collected: 07/29/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-11

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/05/20 01:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/05/20 01:24	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/05/20 01:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/05/20 01:24	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/05/20 01:24	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/05/20 01:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/05/20 01:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/05/20 01:24	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/05/20 01:24	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/05/20 01:24	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/05/20 01:24	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/05/20 01:24	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/05/20 01:24	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/05/20 01:24	1
2-Hexanone	ND		5.0	1.2	ug/L			08/05/20 01:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/05/20 01:24	1
Acetone	ND		10	3.0	ug/L			08/05/20 01:24	1
Benzene	ND		1.0	0.41	ug/L			08/05/20 01:24	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/05/20 01:24	1
Bromoform	ND		1.0	0.26	ug/L			08/05/20 01:24	1
Bromomethane	ND		1.0	0.69	ug/L			08/05/20 01:24	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/05/20 01:24	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/05/20 01:24	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/05/20 01:24	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/05/20 01:24	1
Chloroethane	ND		1.0	0.32	ug/L			08/05/20 01:24	1
Chloroform	ND		1.0	0.34	ug/L			08/05/20 01:24	1
Chloromethane	ND		1.0	0.35	ug/L			08/05/20 01:24	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/05/20 01:24	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/05/20 01:24	1
Cyclohexane	ND		1.0	0.18	ug/L			08/05/20 01:24	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/05/20 01:24	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/05/20 01:24	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/05/20 01:24	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/05/20 01:24	1
Methyl acetate	ND		2.5	1.3	ug/L			08/05/20 01:24	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/05/20 01:24	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/05/20 01:24	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/05/20 01:24	1
Styrene	ND		1.0	0.73	ug/L			08/05/20 01:24	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/05/20 01:24	1
Toluene	ND		1.0	0.51	ug/L			08/05/20 01:24	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/05/20 01:24	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/05/20 01:24	1
Trichloroethene	ND		1.0	0.46	ug/L			08/05/20 01:24	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/05/20 01:24	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/05/20 01:24	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/05/20 01:24	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: TRIP BLANK
Date Collected: 07/29/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-11
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		08/05/20 01:24	1
1,2-Dichloroethane-d4 (Surr)	108		77 - 120		08/05/20 01:24	1
4-Bromofluorobenzene (Surr)	88		73 - 120		08/05/20 01:24	1
Dibromofluoromethane (Surr)	105		75 - 123		08/05/20 01:24	1

Surrogate Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	TOL (80-120)	DCA (77-120)	BFB (73-120)	DBFM (75-123)
480-173244-1	MW 101S	98	106	95	104
480-173244-2	MW 103D	103	108	102	107
480-173244-3	MW 104S	98	107	100	105
480-173244-4	MW 107S	98	106	91	106
480-173244-5	MW 107D	100	109	101	106
480-173244-5 MS	MW 107D MS	104	106	104	104
480-173244-5 MSD	MW 107D MSD	99	108	102	107
480-173244-6	MW 108S	99	108	100	103
480-173244-7	MW 108I	102	108	100	104
480-173244-8	MW 202S	99	107	99	104
480-173244-9	BLIND DUP	103	110	103	106
480-173244-11	TRIP BLANK	94	108	88	105
LCS 480-543631/5	Lab Control Sample	101	102	101	102
MB 480-543631/7	Method Blank	96	105	92	102

Surrogate Legend

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Isotope Dilution Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DXE (15-110)
480-173244-4	MW 107S	47
480-173244-6	MW 108S	47
480-173244-8	MW 202S	47
480-173244-9	BLIND DUP	43
480-173244-10	EQUIP BLANK	55
LCS 480-543599/2-A	Lab Control Sample	29
MB 480-543599/1-A	Method Blank	26

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFHxS (50-150)	C4PFHA (50-150)	PFOA (50-150)	PFOS (50-150)	PFNA (50-150)	PFBA (25-150)	PFHxA (50-150)	PFDA (50-150)
480-173244-1	MW 101S	80	78	76	69	71	57	79	72
480-173244-4	MW 107S	75	78	76	66	68	77	81	79
480-173244-6	MW 108S	79	81	79	69	68	69	84	74
480-173244-8	MW 202S	85	82	80	71	82	61	86	76
480-173244-8 MS	MW 202S MS	83	83	74	74	78	61	91	75
480-173244-8 MSD	MW 202S MSD	88	80	81	70	75	64	93	81
480-173244-9	BLIND DUP	77	80	78	63	76	68	84	80
480-173244-10	EQUIP BLANK	71	78	86	52	81	81	82	69
LCS 200-157617/2-A	Lab Control Sample	84	82	85	84	85	97	90	93
MB 200-157617/1-A	Method Blank	84	81	84	80	85	95	84	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFUnA (50-150)	PFDoA (50-150)	PFOSA (25-150)	PFPeA (25-150)	PFTDA (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)	M262FTS (25-150)
480-173244-1	MW 101S	71	76	47	77	66	66	60	80
480-173244-4	MW 107S	76	80	54	78	67	67	63	73
480-173244-6	MW 108S	83	89	58	79	83	60	62	78
480-173244-8	MW 202S	65	68	62	80	65	55	64	74
480-173244-8 MS	MW 202S MS	75	78	66	82	73	61	68	77
480-173244-8 MSD	MW 202S MSD	72	76	65	82	79	67	76	79
480-173244-9	BLIND DUP	75	78	64	77	79	66	60	88
480-173244-10	EQUIP BLANK	68	66	40	93	63	66	51	91
LCS 200-157617/2-A	Lab Control Sample	89	86	58	90	72	78	81	76
MB 200-157617/1-A	Method Blank	81	71	54	88	67	74	82	81

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M282FTS (25-150)	C3PFBS (50-150)
480-173244-1	MW 101S	77	83
480-173244-4	MW 107S	88	81
480-173244-6	MW 108S	87	72
480-173244-8	MW 202S	73	78
480-173244-8 MS	MW 202S MS	75	78
480-173244-8 MSD	MW 202S MSD	68	78
480-173244-9	BLIND DUP	95	76

Isotope Dilution Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

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

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	M282FTS (25-150)	C3PFBS (50-150)								
480-173244-10	EQUIP BLANK	97	71								
LCS 200-157617/2-A	Lab Control Sample	82	88								
MB 200-157617/1-A	Method Blank	81	82								

Surrogate Legend

PFHxS = 18O2 PFHxS
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFNA = 13C5 PFNA
PFBA = 13C4 PFBA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFOSA = 13C8 FOSA
PFPeA = 13C5 PFPeA
PFTDA = 13C2 PFTeDA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
C3PFBS = 13C3 PFBS

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-543631/7
Matrix: Water
Analysis Batch: 543631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/04/20 19:50	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/04/20 19:50	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/04/20 19:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/04/20 19:50	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/04/20 19:50	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/04/20 19:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/04/20 19:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/04/20 19:50	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/04/20 19:50	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/04/20 19:50	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/04/20 19:50	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/04/20 19:50	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/04/20 19:50	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/04/20 19:50	1
2-Hexanone	ND		5.0	1.2	ug/L			08/04/20 19:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/04/20 19:50	1
Acetone	ND		10	3.0	ug/L			08/04/20 19:50	1
Benzene	ND		1.0	0.41	ug/L			08/04/20 19:50	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/04/20 19:50	1
Bromoform	ND		1.0	0.26	ug/L			08/04/20 19:50	1
Bromomethane	ND		1.0	0.69	ug/L			08/04/20 19:50	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/04/20 19:50	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/04/20 19:50	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/04/20 19:50	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/04/20 19:50	1
Chloroethane	ND		1.0	0.32	ug/L			08/04/20 19:50	1
Chloroform	ND		1.0	0.34	ug/L			08/04/20 19:50	1
Chloromethane	ND		1.0	0.35	ug/L			08/04/20 19:50	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/04/20 19:50	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/04/20 19:50	1
Cyclohexane	ND		1.0	0.18	ug/L			08/04/20 19:50	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/04/20 19:50	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/04/20 19:50	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/04/20 19:50	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/04/20 19:50	1
Methyl acetate	ND		2.5	1.3	ug/L			08/04/20 19:50	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/04/20 19:50	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/04/20 19:50	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/04/20 19:50	1
Styrene	ND		1.0	0.73	ug/L			08/04/20 19:50	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/04/20 19:50	1
Toluene	ND		1.0	0.51	ug/L			08/04/20 19:50	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/04/20 19:50	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/04/20 19:50	1
Trichloroethene	ND		1.0	0.46	ug/L			08/04/20 19:50	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/04/20 19:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/04/20 19:50	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/04/20 19:50	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-543631/7
Matrix: Water
Analysis Batch: 543631

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		08/04/20 19:50	1
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		08/04/20 19:50	1
4-Bromofluorobenzene (Surr)	92		73 - 120		08/04/20 19:50	1
Dibromofluoromethane (Surr)	102		75 - 123		08/04/20 19:50	1

Lab Sample ID: LCS 480-543631/5
Matrix: Water
Analysis Batch: 543631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	24.8		ug/L		99	73 - 126
1,1,2,2-Tetrachloroethane	25.0	22.4		ug/L		89	76 - 120
1,1,2-Trichloroethane	25.0	23.4		ug/L		93	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	24.3		ug/L		97	61 - 148
1,1-Dichloroethane	25.0	24.4		ug/L		98	77 - 120
1,1-Dichloroethene	25.0	23.4		ug/L		94	66 - 127
1,2,4-Trichlorobenzene	25.0	20.8		ug/L		83	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.9		ug/L		83	56 - 134
1,2-Dichlorobenzene	25.0	21.9		ug/L		87	80 - 124
1,2-Dichloroethane	25.0	23.9		ug/L		96	75 - 120
1,2-Dichloropropane	25.0	23.9		ug/L		95	76 - 120
1,3-Dichlorobenzene	25.0	21.9		ug/L		88	77 - 120
1,4-Dichlorobenzene	25.0	21.7		ug/L		87	80 - 120
2-Butanone (MEK)	125	110		ug/L		88	57 - 140
2-Hexanone	125	117		ug/L		94	65 - 127
4-Methyl-2-pentanone (MIBK)	125	116		ug/L		92	71 - 125
Acetone	125	126		ug/L		101	56 - 142
Benzene	25.0	23.8		ug/L		95	71 - 124
Bromodichloromethane	25.0	24.5		ug/L		98	80 - 122
Bromoform	25.0	24.6		ug/L		98	61 - 132
Bromomethane	25.0	30.5		ug/L		122	55 - 144
Carbon disulfide	25.0	22.3		ug/L		89	59 - 134
Carbon tetrachloride	25.0	25.0		ug/L		100	72 - 134
Chlorobenzene	25.0	23.2		ug/L		93	80 - 120
Dibromochloromethane	25.0	24.1		ug/L		97	75 - 125
Chloroethane	25.0	27.4		ug/L		109	69 - 136
Chloroform	25.0	23.0		ug/L		92	73 - 127
Chloromethane	25.0	19.0		ug/L		76	68 - 124
cis-1,2-Dichloroethene	25.0	24.1		ug/L		96	74 - 124
cis-1,3-Dichloropropene	25.0	24.4		ug/L		98	74 - 124
Cyclohexane	25.0	23.1		ug/L		93	59 - 135
Dichlorodifluoromethane	25.0	15.9		ug/L		64	59 - 135
Ethylbenzene	25.0	23.5		ug/L		94	77 - 123
1,2-Dibromoethane	25.0	23.7		ug/L		95	77 - 120
Isopropylbenzene	25.0	22.0		ug/L		88	77 - 122
Methyl acetate	50.0	47.3		ug/L		95	74 - 133
Methyl tert-butyl ether	25.0	23.3		ug/L		93	77 - 120
Methylcyclohexane	25.0	23.6		ug/L		94	68 - 134

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-543631/5
Matrix: Water
Analysis Batch: 543631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	25.0	22.6		ug/L		90	75 - 124
Styrene	25.0	23.6		ug/L		94	80 - 120
Tetrachloroethene	25.0	23.9		ug/L		96	74 - 122
Toluene	25.0	23.3		ug/L		93	80 - 122
trans-1,2-Dichloroethene	25.0	24.2		ug/L		97	73 - 127
trans-1,3-Dichloropropene	25.0	24.2		ug/L		97	80 - 120
Trichloroethene	25.0	24.0		ug/L		96	74 - 123
Trichlorofluoromethane	25.0	23.8		ug/L		95	62 - 150
Vinyl chloride	25.0	21.6		ug/L		86	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*
Dibromofluoromethane (Surr)	*102*		*75 - 123*

Lab Sample ID: 480-173244-5 MS
Matrix: Water
Analysis Batch: 543631

Client Sample ID: MW 107D MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	26.4		ug/L		106	73 - 126
1,1,2,2-Tetrachloroethane	ND		25.0	24.5		ug/L		98	76 - 120
1,1,2-Trichloroethane	ND		25.0	23.6		ug/L		94	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	25.8		ug/L		103	61 - 148
1,1-Dichloroethane	ND		25.0	25.5		ug/L		102	77 - 120
1,1-Dichloroethene	ND		25.0	25.0		ug/L		100	66 - 127
1,2,4-Trichlorobenzene	ND		25.0	22.3		ug/L		89	79 - 122
1,2-Dibromo-3-Chloropropane	ND		25.0	22.7		ug/L		91	56 - 134
1,2-Dichlorobenzene	ND		25.0	24.4		ug/L		98	80 - 124
1,2-Dichloroethane	ND		25.0	24.4		ug/L		98	75 - 120
1,2-Dichloropropane	ND		25.0	25.0		ug/L		100	76 - 120
1,3-Dichlorobenzene	ND		25.0	25.0		ug/L		100	77 - 120
1,4-Dichlorobenzene	ND		25.0	24.7		ug/L		99	78 - 124
2-Butanone (MEK)	ND		125	103		ug/L		82	57 - 140
2-Hexanone	ND		125	112		ug/L		90	65 - 127
4-Methyl-2-pentanone (MIBK)	ND		125	112		ug/L		89	71 - 125
Acetone	ND		125	112		ug/L		90	56 - 142
Benzene	ND	F2	25.0	24.7		ug/L		99	71 - 124
Bromodichloromethane	ND		25.0	25.5		ug/L		102	80 - 122
Bromoform	ND		25.0	24.8		ug/L		99	61 - 132
Bromomethane	ND		25.0	25.2		ug/L		101	55 - 144
Carbon disulfide	ND		25.0	23.1		ug/L		92	59 - 134
Carbon tetrachloride	ND		25.0	26.8		ug/L		107	72 - 134
Chlorobenzene	ND		25.0	24.2		ug/L		97	80 - 120
Dibromochloromethane	ND		25.0	24.5		ug/L		98	75 - 125
Chloroethane	ND		25.0	24.6		ug/L		98	69 - 136
Chloroform	ND		25.0	23.9		ug/L		96	73 - 127

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-173244-5 MS
Matrix: Water
Analysis Batch: 543631

Client Sample ID: MW 107D MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloromethane	ND		25.0	19.6		ug/L		78	68 - 124
cis-1,2-Dichloroethene	ND		25.0	25.5		ug/L		102	74 - 124
cis-1,3-Dichloropropene	ND	F2	25.0	24.7		ug/L		99	74 - 124
Cyclohexane	ND		25.0	24.4		ug/L		98	59 - 135
Dichlorodifluoromethane	ND		25.0	16.8		ug/L		67	59 - 135
Ethylbenzene	ND		25.0	24.5		ug/L		98	77 - 123
1,2-Dibromoethane	ND		25.0	23.8		ug/L		95	77 - 120
Isopropylbenzene	ND		25.0	25.3		ug/L		101	77 - 122
Methyl acetate	ND		50.0	44.9		ug/L		90	74 - 133
Methyl tert-butyl ether	ND		25.0	24.3		ug/L		97	77 - 120
Methylcyclohexane	ND		25.0	24.9		ug/L		100	68 - 134
Methylene Chloride	ND	F2	25.0	22.9		ug/L		92	75 - 124
Styrene	ND		25.0	24.4		ug/L		98	80 - 120
Tetrachloroethene	ND		25.0	25.7		ug/L		103	74 - 122
Toluene	ND		25.0	24.5		ug/L		98	80 - 122
trans-1,2-Dichloroethene	ND		25.0	25.5		ug/L		102	73 - 127
trans-1,3-Dichloropropene	ND		25.0	24.7		ug/L		99	80 - 120
Trichloroethene	ND		25.0	25.0		ug/L		100	74 - 123
Trichlorofluoromethane	ND		25.0	25.5		ug/L		102	62 - 150
Vinyl chloride	ND		25.0	22.6		ug/L		90	65 - 133

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*
Dibromofluoromethane (Surr)	*104*		*75 - 123*

Lab Sample ID: 480-173244-5 MSD
Matrix: Water
Analysis Batch: 543631

Client Sample ID: MW 107D MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	29.9		ug/L		120	73 - 126	12	15
1,1,2,2-Tetrachloroethane	ND		25.0	24.7		ug/L		99	76 - 120	1	15
1,1,2-Trichloroethane	ND		25.0	26.3		ug/L		105	76 - 122	11	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	28.8		ug/L		115	61 - 148	11	20
1,1-Dichloroethane	ND		25.0	29.4		ug/L		118	77 - 120	14	20
1,1-Dichloroethene	ND		25.0	28.3		ug/L		113	66 - 127	12	16
1,2,4-Trichlorobenzene	ND		25.0	23.6		ug/L		94	79 - 122	6	20
1,2-Dibromo-3-Chloropropane	ND		25.0	22.6		ug/L		90	56 - 134	1	15
1,2-Dichlorobenzene	ND		25.0	25.3		ug/L		101	80 - 124	4	20
1,2-Dichloroethane	ND		25.0	28.1		ug/L		112	75 - 120	14	20
1,2-Dichloropropane	ND		25.0	29.1		ug/L		117	76 - 120	15	20
1,3-Dichlorobenzene	ND		25.0	25.2		ug/L		101	77 - 120	1	20
1,4-Dichlorobenzene	ND		25.0	25.2		ug/L		101	78 - 124	2	20
2-Butanone (MEK)	ND		125	113		ug/L		90	57 - 140	9	20
2-Hexanone	ND		125	119		ug/L		95	65 - 127	6	15
4-Methyl-2-pentanone (MIBK)	ND		125	120		ug/L		96	71 - 125	7	35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-173244-5 MSD
Matrix: Water
Analysis Batch: 543631

Client Sample ID: MW 107D MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		125	124		ug/L		99	56 - 142	10	15
Benzene	ND	F2	25.0	28.5	F2	ug/L		114	71 - 124	14	13
Bromodichloromethane	ND		25.0	29.5		ug/L		118	80 - 122	14	15
Bromoform	ND		25.0	27.8		ug/L		111	61 - 132	12	15
Bromomethane	ND		25.0	27.2		ug/L		109	55 - 144	8	15
Carbon disulfide	ND		25.0	25.2		ug/L		101	59 - 134	9	15
Carbon tetrachloride	ND		25.0	30.2		ug/L		121	72 - 134	12	15
Chlorobenzene	ND		25.0	27.0		ug/L		108	80 - 120	11	25
Dibromochloromethane	ND		25.0	27.3		ug/L		109	75 - 125	11	15
Chloroethane	ND		25.0	26.1		ug/L		104	69 - 136	6	15
Chloroform	ND		25.0	27.6		ug/L		111	73 - 127	14	20
Chloromethane	ND		25.0	21.6		ug/L		86	68 - 124	10	15
cis-1,2-Dichloroethene	ND		25.0	29.2		ug/L		117	74 - 124	14	15
cis-1,3-Dichloropropene	ND	F2	25.0	29.0	F2	ug/L		116	74 - 124	16	15
Cyclohexane	ND		25.0	27.5		ug/L		110	59 - 135	12	20
Dichlorodifluoromethane	ND		25.0	17.7		ug/L		71	59 - 135	6	20
Ethylbenzene	ND		25.0	26.9		ug/L		108	77 - 123	9	15
1,2-Dibromoethane	ND		25.0	26.8		ug/L		107	77 - 120	12	15
Isopropylbenzene	ND		25.0	25.5		ug/L		102	77 - 122	1	20
Methyl acetate	ND		50.0	50.1		ug/L		100	74 - 133	11	20
Methyl tert-butyl ether	ND		25.0	27.8		ug/L		111	77 - 120	13	37
Methylcyclohexane	ND		25.0	28.4		ug/L		114	68 - 134	13	20
Methylene Chloride	ND	F2	25.0	26.8	F2	ug/L		107	75 - 124	16	15
Styrene	ND		25.0	27.0		ug/L		108	80 - 120	10	20
Tetrachloroethene	ND		25.0	27.7		ug/L		111	74 - 122	7	20
Toluene	ND		25.0	26.9		ug/L		107	80 - 122	9	15
trans-1,2-Dichloroethene	ND		25.0	29.1		ug/L		117	73 - 127	13	20
trans-1,3-Dichloropropene	ND		25.0	27.7		ug/L		111	80 - 120	12	15
Trichloroethene	ND		25.0	28.8		ug/L		115	74 - 123	14	16
Trichlorofluoromethane	ND		25.0	26.7		ug/L		107	62 - 150	5	20
Vinyl chloride	ND		25.0	25.1		ug/L		100	65 - 133	11	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*
Dibromofluoromethane (Surr)	*107*		*75 - 123*

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-543599/1-A
Matrix: Water
Analysis Batch: 543781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543599

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/04/20 15:10	08/05/20 19:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*26*		*15 - 110*	*08/04/20 15:10*	*08/05/20 19:42*	*1*

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: LCS 480-543599/2-A
Matrix: Water
Analysis Batch: 543781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543599

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			1.00	1.20		ug/L		120	40 - 140		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8	*29*		*15 - 110*

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-157617/1-A
Matrix: Water
Analysis Batch: 157695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 157617

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.00		2.00	1.00	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluoropentanoic acid (PFPeA)	2.00		2.00	0.63	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorohexanoic acid (PFHxA)	2.00		2.00	0.76	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluoroheptanoic acid (PFHpA)	2.00		2.00	0.91	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorooctanoic acid (PFOA)	2.00		2.00	0.81	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorononanoic acid (PFNA)	2.00		2.00	0.27	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorodecanoic acid (PFDA)	2.00		2.00	0.77	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluoroundecanoic acid (PFUnA)	2.00		2.00	0.78	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorododecanoic acid (PFDoA)	2.00		2.00	0.59	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorotridecanoic acid (PFTriA)	2.00		2.00	0.60	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorotetradecanoic acid (PFTeA)	2.00		2.00	0.92	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorobutanesulfonic acid (PFBS)	2.00		2.00	0.49	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorohexanesulfonic acid (PFHxS)	2.00		2.00	0.80	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00		2.00	0.95	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorooctanesulfonic acid (PFOS)	2.00		2.00	0.61	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorodecanesulfonic acid (PFDS)	2.00		2.00	0.90	ng/L		08/06/20 09:27	08/07/20 16:07	1
Perfluorooctanesulfonamide (PFOSA)	10.0		10.0	10.0	ng/L		08/06/20 09:27	08/07/20 16:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0		20.0	1.70	ng/L		08/06/20 09:27	08/07/20 16:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0		20.0	1.50	ng/L		08/06/20 09:27	08/07/20 16:07	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	20.0		20.0	5.50	ng/L		08/06/20 09:27	08/07/20 16:07	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	20.0		20.0	2.90	ng/L		08/06/20 09:27	08/07/20 16:07	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*84*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C4 PFHpA	*81*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C4 PFOA	*84*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C4 PFOS	*80*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C5 PFNA	*85*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C4 PFBA	*95*		*25 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C2 PFHxA	*84*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C2 PFDA	*88*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C2 PFUnA	*81*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*
13C2 PFDoA	*71*		*50 - 150*	*08/06/20 09:27*	*08/07/20 16:07*	*1*

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

Lab Sample ID: MB 200-157617/1-A
Matrix: Water
Analysis Batch: 157695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 157617

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	54		25 - 150	08/06/20 09:27	08/07/20 16:07	1
13C5 PFPeA	88		25 - 150	08/06/20 09:27	08/07/20 16:07	1
13C2 PFTeDA	67		50 - 150	08/06/20 09:27	08/07/20 16:07	1
d3-NMeFOSAA	74		50 - 150	08/06/20 09:27	08/07/20 16:07	1
d5-NEtFOSAA	82		50 - 150	08/06/20 09:27	08/07/20 16:07	1
M2-6:2 FTS	81		25 - 150	08/06/20 09:27	08/07/20 16:07	1
M2-8:2 FTS	81		25 - 150	08/06/20 09:27	08/07/20 16:07	1
13C3 PFBS	82		50 - 150	08/06/20 09:27	08/07/20 16:07	1

Lab Sample ID: LCS 200-157617/2-A
Matrix: Water
Analysis Batch: 157695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 157617

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.04		ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	40.0	42.12		ng/L		105	50 - 150
Perfluorohexanoic acid (PFHxA)	40.0	39.34		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	40.0	46.18		ng/L		115	70 - 130
Perfluorooctanoic acid (PFOA)	40.0	44.35		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	40.0	39.93		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	40.0	44.07		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	40.0	40.32		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	40.0	39.69		ng/L		99	70 - 130
Perfluorotridecanoic acid (PFTriA)	40.0	39.80		ng/L		99	70 - 130
Perfluorotetradecanoic acid (PFTeA)	40.0	45.78		ng/L		114	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	39.52		ng/L		112	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.02		ng/L		104	70 - 130
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.56		ng/L		107	50 - 150
Perfluorooctanesulfonic acid (PFOS)	37.1	40.16		ng/L		108	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	34.05		ng/L		88	50 - 150
Perfluorooctanesulfonamide (PFOSA)	40.0	42.70		ng/L		107	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	36.14		ng/L		90	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.47		ng/L		94	70 - 130
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.9	38.16		ng/L		101	50 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	38.3	38.09		ng/L		99	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
18O2 PFHxS	84		50 - 150

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

Lab Sample ID: LCS 200-157617/2-A
Matrix: Water
Analysis Batch: 157695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 157617

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFHpA	82		50 - 150
13C4 PFOA	85		50 - 150
13C4 PFOS	84		50 - 150
13C5 PFNA	85		50 - 150
13C4 PFBA	97		25 - 150
13C2 PFHxA	90		50 - 150
13C2 PFDA	93		50 - 150
13C2 PFUnA	89		50 - 150
13C2 PFDoA	86		50 - 150
13C8 FOSA	58		25 - 150
13C5 PFPeA	90		25 - 150
13C2 PFTeDA	72		50 - 150
d3-NMeFOSAA	78		50 - 150
d5-NEtFOSAA	81		50 - 150
M2-6:2 FTS	76		25 - 150
M2-8:2 FTS	82		25 - 150
13C3 PFBS	88		50 - 150

Lab Sample ID: 480-173244-8 MS
Matrix: Water
Analysis Batch: 157695

Client Sample ID: MW 202S MS
Prep Type: Total/NA
Prep Batch: 157617

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	1.73		34.9	36.09		ng/L		103	40 - 160
Perfluoropentanoic acid (PFPeA)	0.77	J	34.9	35.98		ng/L		101	40 - 160
Perfluorohexanoic acid (PFHxA)	0.72	J	34.9	36.27		ng/L		102	40 - 160
Perfluoroheptanoic acid (PFHpA)	1.73		34.9	37.66		ng/L		108	40 - 160
Perfluorooctanoic acid (PFOA)	1.92		34.9	41.35		ng/L		113	40 - 160
Perfluorononanoic acid (PFNA)	1.73		34.9	33.94		ng/L		97	40 - 160
Perfluorodecanoic acid (PFDA)	1.73		34.9	36.61		ng/L		105	40 - 160
Perfluoroundecanoic acid (PFUnA)	1.73		34.9	36.74		ng/L		105	40 - 160
Perfluorododecanoic acid (PFDoA)	1.73		34.9	34.54		ng/L		99	40 - 160
Perfluorotridecanoic acid (PFTriA)	1.73		34.9	36.67		ng/L		105	40 - 160
Perfluorotetradecanoic acid (PFTeA)	1.73		34.9	40.92		ng/L		117	40 - 160
Perfluorobutanesulfonic acid (PFBS)	1.73		30.8	36.06		ng/L		117	40 - 160
Perfluorohexanesulfonic acid (PFHxS)	1.73		31.8	33.68		ng/L		106	40 - 160
Perfluoroheptanesulfonic Acid (PFHpS)	1.73		33.2	40.55		ng/L		122	40 - 160
Perfluorooctanesulfonic acid (PFOS)	0.60	J F2	32.4	33.41		ng/L		101	40 - 160
Perfluorodecanesulfonic acid (PFDS)	1.73		33.6	31.50		ng/L		94	40 - 160
Perfluorooctanesulfonamide (PFOSA)	8.63		34.9	38.23		ng/L		110	40 - 160
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.3		34.9	36.06		ng/L		103	40 - 160

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

Lab Sample ID: 480-173244-8 MS
Matrix: Water
Analysis Batch: 157695

Client Sample ID: MW 202S MS
Prep Type: Total/NA
Prep Batch: 157617

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.3		34.9	34.78		ng/L		100	40 - 160
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.3		33.1	35.29		ng/L		107	40 - 160
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.3		33.4	34.87		ng/L		104	40 - 160

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
18O2 PFHxS	*83*		*50 - 150*
13C4 PFHpA	*83*		*50 - 150*
13C4 PFOA	*74*		*50 - 150*
13C4 PFOS	*74*		*50 - 150*
13C5 PFNA	*78*		*50 - 150*
13C4 PFBA	*61*		*25 - 150*
13C2 PFHxA	*91*		*50 - 150*
13C2 PFDA	*75*		*50 - 150*
13C2 PFUnA	*75*		*50 - 150*
13C2 PFDoA	*78*		*50 - 150*
13C8 FOSA	*66*		*25 - 150*
13C5 PFPeA	*82*		*25 - 150*
13C2 PFTeDA	*73*		*50 - 150*
d3-NMeFOSAA	*61*		*50 - 150*
d5-NEtFOSAA	*68*		*50 - 150*
M2-6:2 FTS	*77*		*25 - 150*
M2-8:2 FTS	*75*		*25 - 150*
13C3 PFBS	*78*		*50 - 150*

Lab Sample ID: 480-173244-8 MSD
Matrix: Water
Analysis Batch: 157695

Client Sample ID: MW 202S MSD
Prep Type: Total/NA
Prep Batch: 157617

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	1.73		35.5	37.26		ng/L		105	40 - 160	3	30
Perfluoropentanoic acid (PFPeA)	0.77	J	35.5	37.05		ng/L		102	40 - 160	3	30
Perfluorohexanoic acid (PFHxA)	0.72	J	35.5	35.55		ng/L		98	40 - 160	2	20
Perfluoroheptanoic acid (PFHpA)	1.73		35.5	39.88		ng/L		112	40 - 160	6	20
Perfluorooctanoic acid (PFOA)	1.92		35.5	40.44		ng/L		108	40 - 160	2	20
Perfluorononanoic acid (PFNA)	1.73		35.5	38.87		ng/L		109	40 - 160	14	20
Perfluorodecanoic acid (PFDA)	1.73		35.5	38.17		ng/L		107	40 - 160	4	20
Perfluoroundecanoic acid (PFUnA)	1.73		35.5	39.62		ng/L		112	40 - 160	8	20
Perfluorododecanoic acid (PFDoA)	1.73		35.5	38.44		ng/L		108	40 - 160	11	20
Perfluorotridecanoic acid (PFTriA)	1.73		35.5	42.04		ng/L		118	40 - 160	14	20
Perfluorotetradecanoic acid (PFTeA)	1.73		35.5	37.42		ng/L		105	40 - 160	9	20
Perfluorobutanesulfonic acid (PFBS)	1.73		31.4	38.82		ng/L		124	40 - 160	7	20
Perfluorohexanesulfonic acid (PFHxS)	1.73		32.3	32.37		ng/L		100	40 - 160	4	20

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

Lab Sample ID: 480-173244-8 MSD
Matrix: Water
Analysis Batch: 157695

Client Sample ID: MW 202S MSD
Prep Type: Total/NA
Prep Batch: 157617

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroheptanesulfonic Acid (PFHpS)	1.73		33.8	45.40		ng/L		134	40 - 160	11	30
Perfluorooctanesulfonic acid (PFOS)	0.60	J F2	33.0	42.18	F2	ng/L		126	40 - 160	23	20
Perfluorodecanesulfonic acid (PFDS)	1.73		34.2	35.45		ng/L		104	40 - 160	12	30
Perfluorooctanesulfonamide (PFOSA)	8.63		35.5	37.80		ng/L		106	40 - 160	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17.3		35.5	30.60		ng/L		86	40 - 160	16	20
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17.3		35.5	31.78		ng/L		90	40 - 160	9	20
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	17.3		33.7	35.80		ng/L		106	40 - 160	1	30
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	17.3		34.0	46.18		ng/L		136	40 - 160	28	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
18O2 PFHxS	*88*		*50 - 150*
13C4 PFHpA	*80*		*50 - 150*
13C4 PFOA	*81*		*50 - 150*
13C4 PFOS	*70*		*50 - 150*
13C5 PFNA	*75*		*50 - 150*
13C4 PFBA	*64*		*25 - 150*
13C2 PFHxA	*93*		*50 - 150*
13C2 PFDA	*81*		*50 - 150*
13C2 PFUnA	*72*		*50 - 150*
13C2 PFDoA	*76*		*50 - 150*
13C8 FOSA	*65*		*25 - 150*
13C5 PFPeA	*82*		*25 - 150*
13C2 PFTeDA	*79*		*50 - 150*
d3-NMeFOSAA	*67*		*50 - 150*
d5-NEtFOSAA	*76*		*50 - 150*
M2-6:2 FTS	*79*		*25 - 150*
M2-8:2 FTS	*68*		*25 - 150*
13C3 PFBS	*78*		*50 - 150*

GC/MS VOA

Analysis Batch: 543631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173244-1	MW 101S	Total/NA	Water	8260C	
480-173244-2	MW 103D	Total/NA	Water	8260C	
480-173244-3	MW 104S	Total/NA	Water	8260C	
480-173244-4	MW 107S	Total/NA	Water	8260C	
480-173244-5	MW 107D	Total/NA	Water	8260C	
480-173244-6	MW 108S	Total/NA	Water	8260C	
480-173244-7	MW 108I	Total/NA	Water	8260C	
480-173244-8	MW 202S	Total/NA	Water	8260C	
480-173244-9	BLIND DUP	Total/NA	Water	8260C	
480-173244-11	TRIP BLANK	Total/NA	Water	8260C	
MB 480-543631/7	Method Blank	Total/NA	Water	8260C	
LCS 480-543631/5	Lab Control Sample	Total/NA	Water	8260C	
480-173244-5 MS	MW 107D MS	Total/NA	Water	8260C	
480-173244-5 MSD	MW 107D MSD	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 543599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173244-4	MW 107S	Total/NA	Water	3510C	
480-173244-6	MW 108S	Total/NA	Water	3510C	
480-173244-8	MW 202S	Total/NA	Water	3510C	
480-173244-9	BLIND DUP	Total/NA	Water	3510C	
480-173244-10	EQUIP BLANK	Total/NA	Water	3510C	
MB 480-543599/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-543599/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 543781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173244-4	MW 107S	Total/NA	Water	8270D SIM ID	543599
480-173244-6	MW 108S	Total/NA	Water	8270D SIM ID	543599
480-173244-8	MW 202S	Total/NA	Water	8270D SIM ID	543599
480-173244-9	BLIND DUP	Total/NA	Water	8270D SIM ID	543599
480-173244-10	EQUIP BLANK	Total/NA	Water	8270D SIM ID	543599
MB 480-543599/1-A	Method Blank	Total/NA	Water	8270D SIM ID	543599
LCS 480-543599/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	543599

LCMS

Prep Batch: 157617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173244-1	MW 101S	Total/NA	Water	3535	
480-173244-4	MW 107S	Total/NA	Water	3535	
480-173244-6	MW 108S	Total/NA	Water	3535	
480-173244-8	MW 202S	Total/NA	Water	3535	
480-173244-9	BLIND DUP	Total/NA	Water	3535	
480-173244-10	EQUIP BLANK	Total/NA	Water	3535	
MB 200-157617/1-A	Method Blank	Total/NA	Water	3535	
LCS 200-157617/2-A	Lab Control Sample	Total/NA	Water	3535	
480-173244-8 MS	MW 202S MS	Total/NA	Water	3535	
480-173244-8 MSD	MW 202S MSD	Total/NA	Water	3535	

QC Association Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

LCMS

Analysis Batch: 157695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173244-1	MW 101S	Total/NA	Water	537 (modified)	157617
480-173244-4	MW 107S	Total/NA	Water	537 (modified)	157617
480-173244-6	MW 108S	Total/NA	Water	537 (modified)	157617
480-173244-8	MW 202S	Total/NA	Water	537 (modified)	157617
480-173244-9	BLIND DUP	Total/NA	Water	537 (modified)	157617
480-173244-10	EQUIP BLANK	Total/NA	Water	537 (modified)	157617
MB 200-157617/1-A	Method Blank	Total/NA	Water	537 (modified)	157617
LCS 200-157617/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	157617
480-173244-8 MS	MW 202S MS	Total/NA	Water	537 (modified)	157617
480-173244-8 MSD	MW 202S MSD	Total/NA	Water	537 (modified)	157617

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 101S
Date Collected: 07/29/20 09:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/04/20 21:40	CRL	TAL BUF
Total/NA	Prep	3535			157617	08/06/20 09:27	ND	TAL BUR
Total/NA	Analysis	537 (modified)		1	157695	08/07/20 17:46	BWC	TAL BUR

Client Sample ID: MW 103D
Date Collected: 07/29/20 09:20
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	543631	08/04/20 22:05	CRL	TAL BUF

Client Sample ID: MW 104S
Date Collected: 07/29/20 10:15
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/04/20 22:30	CRL	TAL BUF

Client Sample ID: MW 107S
Date Collected: 07/28/20 11:40
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	543631	08/04/20 22:55	CRL	TAL BUF
Total/NA	Prep	3510C			543599	08/04/20 15:10	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	543781	08/05/20 22:43	PJQ	TAL BUF
Total/NA	Prep	3535			157617	08/06/20 09:27	ND	TAL BUR
Total/NA	Analysis	537 (modified)		1	157695	08/07/20 17:54	BWC	TAL BUR

Client Sample ID: MW 107D
Date Collected: 07/28/20 12:10
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/04/20 23:20	CRL	TAL BUF

Client Sample ID: MW 108S
Date Collected: 07/28/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/04/20 23:45	CRL	TAL BUF
Total/NA	Prep	3510C			543599	08/04/20 15:10	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	543781	08/05/20 23:06	PJQ	TAL BUF
Total/NA	Prep	3535			157617	08/06/20 09:27	ND	TAL BUR
Total/NA	Analysis	537 (modified)		1	157695	08/07/20 18:11	BWC	TAL BUR

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Client Sample ID: MW 108I
Date Collected: 07/28/20 13:05
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/05/20 00:09	CRL	TAL BUF

Client Sample ID: MW 202S
Date Collected: 07/29/20 10:53
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	543631	08/05/20 00:34	CRL	TAL BUF
Total/NA	Prep	3510C			543599	08/04/20 15:10	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	543781	08/05/20 21:58	PJQ	TAL BUF
Total/NA	Prep	3535			157617	08/06/20 09:27	ND	TAL BUR
Total/NA	Analysis	537 (modified)		1	157695	08/07/20 18:19	BWC	TAL BUR

Client Sample ID: BLIND DUP
Date Collected: 07/28/20 12:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/05/20 00:59	CRL	TAL BUF
Total/NA	Prep	3510C			543599	08/04/20 15:10	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	543781	08/05/20 23:29	PJQ	TAL BUF
Total/NA	Prep	3535			157617	08/06/20 09:27	ND	TAL BUR
Total/NA	Analysis	537 (modified)		1	157695	08/07/20 18:44	BWC	TAL BUR

Client Sample ID: EQUIP BLANK
Date Collected: 07/29/20 10:45
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			543599	08/04/20 15:10	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	543781	08/05/20 23:51	PJQ	TAL BUF
Total/NA	Prep	3535			157617	08/06/20 09:27	ND	TAL BUR
Total/NA	Analysis	537 (modified)		1	157695	08/07/20 18:52	BWC	TAL BUR

Client Sample ID: TRIP BLANK
Date Collected: 07/29/20 13:00
Date Received: 07/30/20 14:42

Lab Sample ID: 480-173244-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	543631	08/05/20 01:24	CRL	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-02-21

Laboratory: Eurofins TestAmerica, Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-23
Connecticut	State	PH-0751	09-30-21
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-16-21
Florida	NELAP	E87467	06-30-21
Minnesota	NELAP	050-999-436	12-31-20
New Hampshire	NELAP	2006	12-18-20
New Jersey	NELAP	VT972	06-30-21
New York	NELAP	10391	04-01-21
Pennsylvania	NELAP	68-00489	04-30-21
Rhode Island	State	LAO00298	12-30-20
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00272	08-09-20
Vermont	State	VT4000	12-31-20
Virginia	NELAP	460209	12-14-20
Wisconsin	State	399133350	08-31-21

Method Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173244-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-173244-1	MW 101S	Water	07/29/20 09:45	07/30/20 14:42	
480-173244-2	MW 103D	Water	07/29/20 09:20	07/30/20 14:42	
480-173244-3	MW 104S	Water	07/29/20 10:15	07/30/20 14:42	
480-173244-4	MW 107S	Water	07/28/20 11:40	07/30/20 14:42	
480-173244-5	MW 107D	Water	07/28/20 12:10	07/30/20 14:42	
480-173244-6	MW 108S	Water	07/28/20 13:00	07/30/20 14:42	
480-173244-7	MW 108I	Water	07/28/20 13:05	07/30/20 14:42	
480-173244-8	MW 202S	Water	07/29/20 10:53	07/30/20 14:42	
480-173244-9	BLIND DUP	Water	07/28/20 12:00	07/30/20 14:42	
480-173244-10	EQUIP BLANK	Water	07/29/20 10:45	07/30/20 14:42	
480-173244-11	TRIP BLANK	Water	07/29/20 13:00	07/30/20 14:42	

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 1 of 2

Date Rec'd in Lab:

ALPHA Job #:

Client Information
Client: Benchmark Env Engr & Sci.
Address: 2558 Hamburg Turnpike
Buffalo, NY 14218
Phone: 716-856-0599
Fax:
Email: T. Forbes / R. DuBois2

Project Information
Project Name: URBana LF Gum
Project Location: URBana NY
Project # B0001.001-300 PH-002
(Use Project name as Project #) ☑
Project Manager: Tom Forbes
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
CAT "B" Deliverables

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 TCL	1,4 Dioxane SIM	PFAAs	Sample Specific Comments
	MW 101S	7/29/20	0945	W	RLD	✓		*✓	*Insufficient well volume for 2nd PFAAs container.
	MW 103D	7/29/20	0920	W	RLD	✓			
	MW 104S	7/29/20	1015	W	RLD	✓			
	MW 107S	7/28/20	1140	W	NS	✓	✓	✓	
	MW 107D	7/28/20	1210	W	RLD	✓			
	MW 108S	7/28/20	1300	W	RLD	✓	✓	✓	
	MW 108I	7/28/20	1305	W	NS	✓		✓	
	MW ~~2000~~ 202S	7/29/20	1053	W	RLD	✓	✓	✓	
	B2WD Duplicate	7/28/20	1200	W	RLD	✓	✓	✓	
	Equip Blank	7/29/20	1045	W	RLD		✓	✓	

480-173244 Chain of Custody

Container Type	V	A	P
Preservative	B	A	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	7/30/20 1442		7/30/20 1442

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

3.1 #1

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 2

Date Rec'd in Lab:

ALPHA Job #:

Client Information
Client: Benchmark Env Engg & Sci
Address: 2558 Hamburg Turnpike
Buffalo, NY 14218
Phone: 716-856-0599
Fax:
Email: T. Forbes / R. Quist

Project Information
Project Name: VRBAWA LF GWM
Project Location: VRBAWA NY
Project #: B0021-001-300 PH-002
(Use Project name as Project #): ☒
Project Manager: Tom Forbes
ALPHAQuote #:

Turn-Around Time
Standard: ☒ Due Date:
Rush (only if pre approved): ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
CAT "B" Deliverables

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260	1,4 Dioxane SIM	PFAAs	Sample Specific Comments
	MS - MW-107D	7/29/20	1210	W	RLD	✓			
	MSD - MW-107D	7/29/20	1210	W	RLD	✓			
	Trip Blank	7/29/20	1300	W	RLD	✓			
	MS MW-202S	7/29/20	1053	W	RLD		✓	✓	
	MSD MW-202S	7/29/20	1053	W	RLD		✓	✓	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	A	P
Preservative	B	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
	7/30/20 1442		7/30/20 1442

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

3.1 #1

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

Chain of Custody Record

480-173244 Chain of Custody

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fischer, Brian J	COC No: 480-57504.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Brian.Fischer@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York	Job #: 480-173244-1
Address: 30 Community Drive, Suite 11,	Due Date Requested: 8/4/2020		
City: South Burlington	TAT Requested (days):		
State, Zip: VT, 05403			
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:		
Email:	WO #:		
Project Name: Benchmark - Urbana LF GWM	Project #: 48022548		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/3535_IWT PFAS, Standard List (21 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW 101S (480-173244-1)	7/29/20	09:45 Eastern		Water			X	1	
MW 107S (480-173244-4)	7/28/20	11:40 Eastern		Water			X	2	
MW 108S (480-173244-6)	7/28/20	13:00 Eastern		Water			X	2	
MW 202S (480-173244-8)	7/29/20	10:53 Eastern		Water			X	2	
MW 202S MS (480-173244-8MS)	7/29/20	10:53 Eastern	MS	Water			X	2	
MW 202S MSD (480-173244-8MSD)	7/29/20	10:53 Eastern	MSD	Water			X	2	
BLIND DUP (480-173244-9)	7/28/20	12:00 Eastern		Water			X	2	
EQUIP BLANK (480-173244-10)	7/29/20	10:45 Eastern		Water			X	2	

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

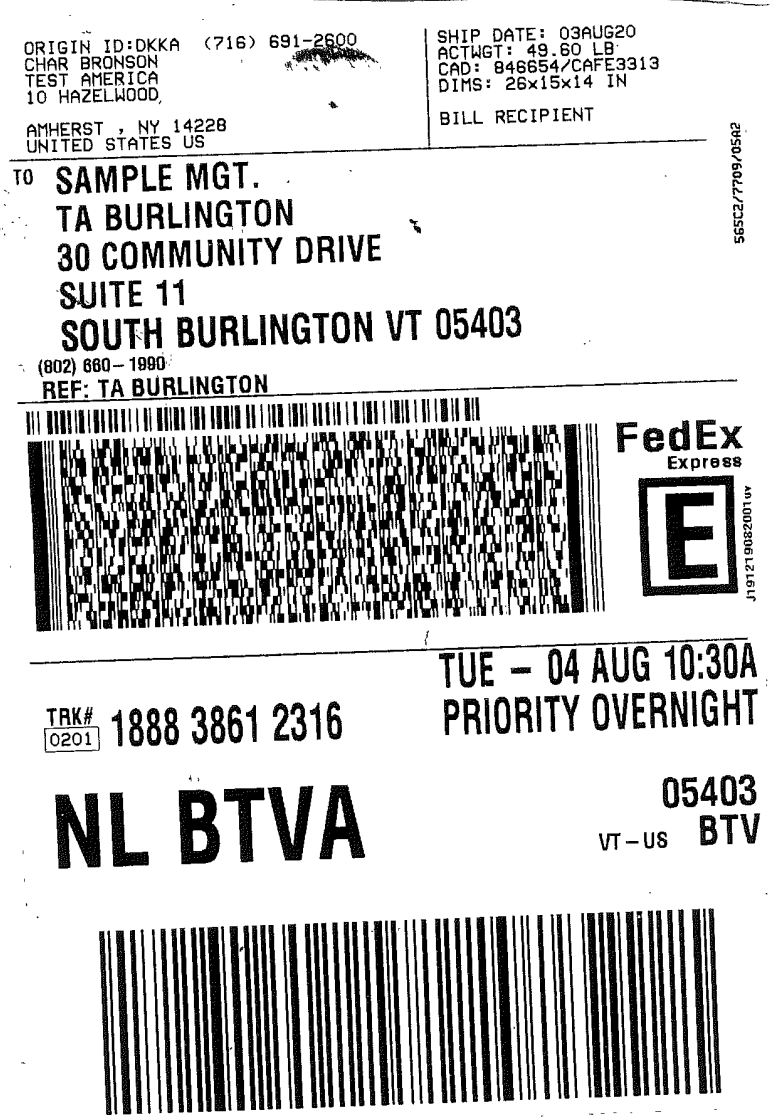
Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Matthew Cirolo	08/03/20 17:00	TA		8-5-20 10:35	TAPUBL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3

Ver: 01/16/2019



ORIGIN ID:DKKA (716) 691-2600
CHAR BRONSON
TEST AMERICA
10 HAZELWOOD,

AMHERST , NY 14228
UNITED STATES US

SHIP DATE: 03AUG20
ACTWGT: 49.60 LB
CAD: 8466654/CAFE3313
DIMS: 26x15x14 IN

BILL RECIPIENT

565C2/7709/0582

TO SAMPLE MGT.
TA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1990
REF: TA BURLINGTON

FedEx Express

J1912190820010V

TUE - 04 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0201 1888 3861 2316

NL BTVA

05403
VT-US BTV

Login Sample Receipt Checklist

Client: Benchmark Env. Eng. & Science, PLLC

Job Number: 480-173244-1

Login Number: 173244

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Benchmark Env. Eng. & Science, PLLC

Job Number: 480-173244-1

Login Number: 173244
List Number: 2
Creator: Jaffe, Natalie S

List Source: Eurofins TestAmerica, Burlington
List Creation: 08/05/20 02:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 480-173319-1
Client Project/Site: Benchmark - Urbana LF GWM

For:
Benchmark Env. Eng. & Science, PLLC
2558 Hamburg Turnpike
Suite 300
Lackawanna, New York 14218

Attn: Mr. Rick Dubisz

Authorized for release by:
8/10/2020 12:27:37 PM

Brian Fischer, Manager of Project Management
(716)504-9835
Brian.Fischer@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173319-1
Project/Site: Benchmark - Urbana LF GWM

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.

Glossary

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

Job ID: 480-173319-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-173319-1

Comments
No additional comments.

Receipt
The sample was received on 8/4/2020 12:00 PM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS Semi VOA
Method 8270D SIM ID: The 1,4-Dioxane result reported for samples (LCS 480-543816/2-A) and (LCSD 480-543816/3-A) have an E flag qualifier indicating the results are over the calibration range on the raw data. The actual amounts are within the calibration range; however, the E flag is generated based upon the bias corrected concentration. The LIMS system calculates a bias correction based on the recovery of the 1,4-Dioxane-d8 isotope. (LCS 480-543816/2-A) and (LCSD 480-543816/3-A)

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

Organic Prep
Method 3510C: Insufficient sample volume was provided for the following sample for the 8270 SIM analysis: MW-101S (480-173319-1).

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

Detection Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173319-1
Project/Site: Benchmark - Urbana LF GWM

Client Sample ID: MW-101S **Lab Sample ID: 480-173319-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173319-1

Client Sample ID: MW-101S
Date Collected: 07/29/20 09:45
Date Received: 08/04/20 12:00

Lab Sample ID: 480-173319-1
Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.80	0.40	ug/L		08/05/20 15:19	08/06/20 17:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*55*		*15 - 110*	*08/05/20 15:19*	*08/06/20 17:25*	*1*

Isotope Dilution Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173319-1
Project/Site: Benchmark - Urbana LF GWM

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DXE (15-110)							
480-173319-1	MW-101S	55							
LCS 480-543816/2-A	Lab Control Sample	27							
LCSD 480-543816/3-A	Lab Control Sample Dup	24							
MB 480-543816/1-A	Method Blank	27							

Surrogate Legend

DXE = 1,4-Dioxane-d8

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173319-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-543816/1-A
Matrix: Water
Analysis Batch: 544002

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		08/05/20 15:19	08/06/20 16:17	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8	*27*		*15 - 110*	*08/05/20 15:19*	*08/06/20 16:17*	*1*

Lab Sample ID: LCS 480-543816/2-A
Matrix: Water
Analysis Batch: 544002

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.00	1.24	E	ug/L		124	40 - 140

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8	*27*		*15 - 110*

Lab Sample ID: LCSD 480-543816/3-A
Matrix: Water
Analysis Batch: 544002

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 543816

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	1.00	1.26	E	ug/L		126	40 - 140	2	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dioxane-d8	*24*		*15 - 110*

QC Association Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173319-1
Project/Site: Benchmark - Urbana LF GWM

GC/MS Semi VOA

Prep Batch: 543816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173319-1	MW-101S	Total/NA	Water	3510C	
MB 480-543816/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-543816/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-543816/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 544002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-173319-1	MW-101S	Total/NA	Water	8270D SIM ID	543816
MB 480-543816/1-A	Method Blank	Total/NA	Water	8270D SIM ID	543816
LCS 480-543816/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	543816
LCSD 480-543816/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM ID	543816

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173319-1
Project/Site: Benchmark - Urbana LF GWM

Client Sample ID: MW-101S
Lab Sample ID: 480-173319-1
Date Collected: 07/29/20 09:45
Matrix: Water
Date Received: 08/04/20 12:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			543816	08/05/20 15:19	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	544002	08/06/20 17:25	PJQ	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173319-1
Project/Site: Benchmark - Urbana LF GWM

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-02-21

Method Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173319-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF

Protocol References:

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

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark - Urbana LF GWM

Job ID: 480-173319-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-173319-1	MW-101S	Water	07/29/20 09:45	08/04/20 12:00	

Eurofins TestAmerica

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler: Nick Sorachi	Lab PM: Brian Fischer	Carrier Tracking No(s):	COC No:
Client Contact: Nick Sorachi	Phone: 716-713-3437	E-Mail: BF	State of Origin: NY	Page:
Company: Benchmark Environmental Engineering		Accreditations Required (See note):		Job #:
Address: 2558 Hamburg Tpke	Due Date Requested: 7/24/2020			
City: Buffalo	TAT Requested (days): Standard			
State, Zip: NY, 14218	PO #: B0001-004-300			
Phone: 716-713-3437	WO #:			
Email: TForbes@BM-Tic.com	Project #: 46003851			
Project Name: [redacted]	SSOW#:			
Site: [redacted] Urban Landfill				

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1,4 Dioxane	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-101S	7/22/20	09:45	G	W			X	1	Limited Volume

Preservation Codes:

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

Other:

480-173319 Chain of Custody

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

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

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

Relinquished by:	Date/Time: 8/4/20 12:00	Company: BMTic	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: BD	Date/Time: 8/4/20 1200	Company TAS

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

Ver: 01/16/2019

8/10/2020

Login Sample Receipt Checklist

Client: Benchmark Env. Eng. & Science, PLLC

Job Number: 480-173319-1

Login Number: 173319

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	BMTK
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: URSANA LF. Date: 7/28/20

Location: Project No.: Field Team:

Well No. MW-101S	Diameter (inches): 4"	Sample Date / Time: 7/28/20
Product Depth (fbTOR):	Water Column (ft): 22.66'/19	DTW when sampled:
DTW (static) (fbTOR): 15.46	One Well Volume (gal): 16436.19	Purpose: ☐ Development ☐ Sample ☒ Purge & Sample
Total Depth (fbTOR): 16.07	Total Volume Purged (gal):	Purge Method: Bailer

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial	—	6.98	15.1	238	>100		191	Grey / turb
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
7/29/20 0945	S1									
	S2									

Well No.	Diameter (inches):	Sample Date / Time:
Product Depth (fbTOR):	Water Column (ft):	DTW when sampled:
DTW (static) (fbTOR):	One Well Volume (gal):	Purpose: ☐ Development ☐ Sample ☐ Purge & Sample
Total Depth (fbTOR):	Total Volume Purged (gal):	Purge Method:

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial								
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
	S1									
	S2									

REMARKS: MW-101S purged to DRYNESS. MINIMAL WELL VOLUME TO COLLECT BOTH SAMPLE CONTAINERS FOR 1,4 DIOXANE & PFAS ONLY FIELD measurements

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: URBNA 2F
Location: Project No.: Date: 7/29/20
Field Team:

Well No. MW 107S | Diameter (inches): 2 | Sample Date / Time: 7/28/20 11:40
Product Depth (fbTOR): | Water Column (ft): | DTW when sampled:
DTW (static) (fbTOR): 6.43 | One Well Volume (gal): | Purpose: ☐ Development ☐ Sample ☑ Purge & Sample
Total Depth (fbTOR): 12.78 | Total Volume Purged (gal): 1.92 | Purge Method: Bailer

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
10:30	0	Initial	0	6.23	16.6	941	20		140	clear None
10:40	1	7.53	2	6.26	15.8	897	21.9		13	
11:00	2	8.10	4	7.25	15.0	892	18.8		-13	
11:20	3	9.71	6	7.28	14	899	29.1		-56	
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
11:40	S1	9.28	6	7.19	15	909	66.1		-58	clear No odor
	S2									

Well No. MW-107D | Diameter (inches): 4" | Sample Date / Time:
Product Depth (fbTOR): | Water Column (ft): | DTW when sampled:
DTW (static) (fbTOR): 11.71 | One Well Volume (gal): 12.10 | Purpose: ☐ Development ☐ Sample ☑ Purge & Sample
Total Depth (fbTOR): 30.07 | Total Volume Purged (gal): | Purge Method: Bailer

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial								
	1		12	7.60	13.1	587	30.9		-3	clear
	2		25	7.67	12.2	598	34		-30	Mod Silt
	3		37	7.89						
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
1210	S1	24.54	37	7.88	13.6	568	38		-70	~~Mod Silt~~ clear
1232	S2	22.34	37.5	7.82	13.2	577	33		+5	clear

REMARKS: 107D MS/MSD VOC

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Date: 7/29/20

Location: Project No.: Field Team:

Well No. MW 108~~S~~	Diameter (inches): 2"	Sample Date / Time: 7/29/20 1500	
Product Depth (fbTOR):	Water Column (ft):	DTW when sampled:	
DTW (static) (fbTOR): 10.53	One Well Volume (gal): 3.20	Purpose: ☐ Development ☐ Sample ☒ Purge & Sample	
Total Depth (fbTOR): 29.60	Total Volume Purged (gal):	Purge Method: Bail	

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial	0	6.86	13.3	707.7	OR		59	Turbid No odor
	1		3.20	6.66	11.9	726	OR		+74	" "
	2	10.70	6.40	6.57	11.5	734.5	OR		91	
	3		9.60	6.63	11.7	730	245		116	Turbid No odor
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
	S1	16.40	9.60	6.63	11.7	730	245		116	
	S2	10.90	9.60	6.59	11.7	736	183		116	Turbid No odor

108S

Well No. MW 108~~S~~	Diameter (inches): 2	Sample Date / Time:	
Product Depth (fbTOR):	Water Column (ft):	DTW when sampled:	
DTW (static) (fbTOR): 8.80	One Well Volume (gal): 1.73	Purpose: ☐ Development ☐ Sample ☒ Purge & Sample	
Total Depth (fbTOR): 19	Total Volume Purged (gal):	Purge Method:	

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial								
	1		2	6.53	13.4	771	211		+102	NRBLD
	2		4	6.60	12.5	707	166		+114	NRBLD
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
1300	S1	17.70	4	6.57	12.6	763	56		+115	Clear
1314	S2	17.25	4	6.58	15.7	766	63		+124	Clear

REMARKS: BLIND DUP collected FOR VOCs & EC at MW 108S. well purged to near DRYness

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Date: 7/29/20

Location: Project No.: Field Team:

Well No. MW 1030			Diameter (inches): 3"			Sample Date / Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR): 23.40			One Well Volume (gal): 2.50			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 30.85			Total Volume Purged (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial		8.11	14.3	786	30		+83	clear
	1	2.50	7.44	13.4	461	127		+43	RUST
	2	5	7.31	12.5	439	130		+41	RUST
	3	7.50	7.26	13	456	228		+36	RUST
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
0420	S1 27.20	7.50	7.00	12.8	478	185		+73	RUST
0425	S2 27.20	7.50	7.04	13.3	423	117		+64	RUST

Well No. MW 1045			Diameter (inches): 2			Sample Date / Time: 7/29/20			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR): 5.40			One Well Volume (gal): 1.50			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 18.45			Total Volume Purged (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial		6.58	15.1	1051	142	—	-63	~~Cloudy~~ TURBID
	1	1.50	6.59	12.9	1074	58.2		-70	cloudy
	2	3	6.47	12	1074	68.4		-72	cloudy
	3	4.50	6.46	12.4	1043	72.7		-70	cloudy
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1015	S1	4.50	6.43	12.2	1048	62.6		-70	cloudy
1020	S2	4.50	6.60	14.3	1008	152		-75	~~cloudy~~ cloudy

REMARKS:

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

5" 0.36

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Date: 7/29/20

Location: Project No.: Field Team:

Well No. MW-20RS	Diameter (inches): 2	Sample Date / Time:
Product Depth (fbTOR):	Water Column (ft):	DTW when sampled:
DTW (static) (fbTOR): 13.50	One Well Volume (gal): 1.54	Purpose: ☐ Development ☐ Sample ☐ Purge & Sample
Total Depth (fbTOR): 22.57	Total Volume Purged (gal):	Purge Method:

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial		6.49	12.5	108.4	412		+47	CLOUDY
	1	1.53		6.47	11.3	164	662		+41	TURBID
	2	3.06		6.69	11.1	222	387		+51	" "
	3	4.59		6.80	11.2	263	278		+54	" "
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
1055	S1	14.90		6.88	12.1	277	164		+63	TURBID
1100	S2			7.00	12.1	~~277~~ 310	43		+67	TURBID

Well No. EB	Diameter (inches):	Sample Date / Time: 7/24/20
Product Depth (fbTOR):	Water Column (ft):	DTW when sampled:
DTW (static) (fbTOR):	One Well Volume (gal):	Purpose: ☐ Development ☐ Sample ☐ Purge & Sample
Total Depth (fbTOR):	Total Volume Purged (gal):	Purge Method:

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0	Initial								
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
	S1									
	S2									

REMARKS: EB taken prior to MW-20RS purge sample,

MS/MSD for EC taken at ~~MW-20RS~~ MW-20RS

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

` Data Validation Services
120 Cobble Creek Road P. O. Box 208
North Creek, NY 12853
Phone (518) 251-4429
harry@frontiernet.net

September 1, 2020

Rick Dubisz
Benchmark Environmental Engineering & Science, PLLC
2558 Hamburg Turnpike
Buffalo, NY 14218

RE: Validation of the Urbana Landfill Site Analytical Laboratory Data
Data Usability Summary Report (DUSR)
Eurofins TA SDG No. 480-173244-1

Dear Mr. Dubisz:

Review has been completed for the data package generated by Eurofins TestAmerica that pertains to aqueous samples collected 07/28/20 and 07/29/20 at the Tecumseh Urbana Landfill site. Four samples and a field duplicate were processed for TCL volatiles, per- and polyfluorinated alkyl substances (PFAS), and 1,4-dioxane. One sample was processed for TCL volatiles and per- and polyfluorinated alkyl substances (PFAS), and three samples were processed for TCL volatiles. The analytical methodologies are those of the USEPA SW846 and a modified USEPA method 537.

The data packages submitted by the laboratory contain full deliverables for validation, and this usability report is generated from review of the QC summary form information, with full review of sample raw data and limited review of associated QC raw data. The reported QC summary forms and sample raw data have been reviewed for application of validation qualifiers, with guidance from the USEPA national and regional validation documents and the specific requirements of the analytical methodology. The following items were reviewed:

* Data Completeness
* Case Narrative
* Custody Documentation
* Holding Times
* Surrogate, Isotopic Dilution, and Internal Standard Recoveries
* Method/Preparation/Equipment/Trip Blanks
* Matrix Spike Recoveries/Duplicate Correlations
* Blind Field Duplicate Correlations
* Laboratory Control Sample (LCS)
* Instrumental Tunes
* Initial and Continuing Calibration Standards
* Method Compliance
* Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for the DUSR level review, as discussed in NYS DER-10 Appendix B Section 2.0 (c). Documentation of the outlying parameters cited in this report can be found in the laboratory data package.

In summary, most of the results for the samples are usable either as reported or with minor qualification.

Data completeness, accuracy, precision, representativeness, reproducibility, sensitivity, and comparability are acceptable.

The laboratory modifications to the USEPA method 537 are significant, including acceptance ranges, consistent in many respects to the advances in the available monitoring compounds. Validation actions are based on regulatory agency guidance and the laboratory procedures, in consideration that the laboratory undergoes NYS DOH certifications and NYS SOP review.

Validation qualified definitions and client sample identifications are attached to this text. Also included in this report is the client EDD with the recommended qualifiers/edits applied in red.

Chains-of-Custody/Sample Receipt

The custody form for the 1,4-dioxane fraction of MW-101S was not included in the laboratory data package, but was found in a summary package generated for that fraction.

A memorandum to the file should be made to document the temperature and condition of the 1,4-dioxane fraction of MW-101S prior to its delayed shipment to the laboratory (shipped six days after collection).

Blind Field Duplicate

The blind field duplicate evaluation was performed on MW 108S. Correlations fall within laboratory guidelines.

TCL Volatile Analyses by EPA 8260C

The matrix spikes of MW 107D show recoveries and duplicate correlations that are within validation guidelines. LCS recoveries are compliant.

Holding times were met. Surrogate and internal standard recoveries are compliant. Blanks show no contamination.

Calibration standards showed acceptable responses, with the exception of that for bromomethane (24%D), the results for which are qualified as estimated in the samples and blanks.

Some of the samples were processed only at dilution due to analyte concentrations. Reporting limits are proportionally elevated.

1,4-Dioxane Analyses by EPA8270D SIM

Holding times were met. Surrogate and internal standard recoveries are compliant. Blanks show no contamination.

Calibration standards showed acceptable responses

Due to low sample volume, no matrix spikes were processed, and the effect of the matrix on the reported results has not been ascertained.

PFAS by Modified EPA Method 537

PFAS compounds are identified by their common acronyms in this report. The EDDs reference both the technical names and the acronyms.

Matrix spikes of MW 202S show recoveries and correlations within validation guidelines. LCS recoveries are compliant.

Holding times were met. Surrogate and internal standard recoveries are compliant. Blanks show no contamination.

Calibration standards showed acceptable responses

The data package sample results Forms 1 do not include the laboratory "U" flag, and therefore imply all analytes are detected in all samples. The EDD is correct, and there is no effect on those results.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,

Judy Harry

Judy Harry

Attachments: Validation Qualifier Definitions
Sample Identifications
Qualified Laboratory EQuIS EDD

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
J-	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
J+	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
UJ	The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

Sample Summaries

Sample Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-173244-1
Project/Site: Benchmark - Urbana LF GWM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-173244-1	MW 101S	Water	07/29/20 09:45	07/30/20 14:42	
480-173244-2	MW 103D	Water	07/29/20 09:20	07/30/20 14:42	
480-173244-3	MW 104S	Water	07/29/20 10:15	07/30/20 14:42	
480-173244-4	MW 107S	Water	07/28/20 11:40	07/30/20 14:42	
480-173244-5	MW 107D	Water	07/28/20 12:10	07/30/20 14:42	
480-173244-6	MW 108S	Water	07/28/20 13:00	07/30/20 14:42	
480-173244-7	MW 108I	Water	07/28/20 13:05	07/30/20 14:42	
480-173244-8	MW 202S	Water	07/29/20 10:53	07/30/20 14:42	
480-173244-9	BLIND DUP	Water	07/28/20 12:00	07/30/20 14:42	
480-173244-10	EQUIP BLANK	Water	07/29/20 10:45	07/30/20 14:42	
480-173244-11	TRIP BLANK	Water	07/29/20 13:00	07/30/20 14:42	
480-173319-1	MW-101S	Water	07/29/20 09:45	08/04/20 12:00	

APPENDIX C

PHOTO LOG

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
1	07/23/20

Direction Photo Taken:
North

Description:
Site Conditions- groundwater treatment system

Photo No.	Date
2	07/23/20

Direction Photo Taken:
South

Description:
Site Conditions- groundwater treatment system

Prepared By: THF

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
3	07/23/20

Direction Photo Taken:
Northwest

Description:
Site Conditions- groundwater treatment building

Photo No.	Date
4	07/23/20

Direction Photo Taken:
North

Description:
Site Conditions- western terrace looking north

Prepared By: THF

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
5	07/23/20

Direction Photo Taken:
North

Description:
Creek adjacent to landfill

Photo No.	Date
6	07/23/20

Direction Photo Taken:
South

Description:
Stabilized creek

Prepared By: THF

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
7	07/23/20

Direction Photo Taken:
West

Description:
Site Conditions - western terrace looking Northwest

Photo No.	Date
8	07/23/20

Direction Photo Taken:
Southwest

Description:
Site Conditions- upper terrace looking southwest

Prepared By: *THF*

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
9	07/23/20

Direction Photo Taken:
South-Southwest

Description:
Site conditions- upper terrace looking south

Photo No.	Date
10	07/23/20

Direction Photo Taken:
West

Description:
Site conditions- middle terrace looking west

Prepared By: THF

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
11	07/23/20

Direction Photo Taken:
Southeast

Description:
Site Conditions- Lower terrace 2 looking southeast

Photo No.	Date
12	07/23/20

Direction Photo Taken:
West

Description:
Site Conditions- Lower terrace 1 looking west

Prepared By: THF

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Mercury Aircraft, Inc	Town of Urbana Landfill- Urbana, New York	0001-001-300

Photo No.	Date
13	07/23/20

Direction Photo Taken:
South

Description:
Site Conditions- Landfill access road