

November 29, 2018

Mr. Ronnie Lee, P.E.
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233

**Subject: Former EMCA Site, Mamaroneck, Westchester County, New York
NYSDEC Registry Site No. 360025
Emerging Contaminants Groundwater Sampling Work Plan**

Dear Mr. Lee:

On behalf of Rohm and Haas Company, a wholly-owned subsidiary of the Dow Chemical Company (Rohm and Haas), AECOM Technical Services, Inc. (AECOM) has prepared this Emerging Contaminants Groundwater Sampling Work Plan (Work Plan) in response to your letter request of April 6, 2018, directing emerging contaminants groundwater sampling at the Former EMCA Site in Mamaroneck, New York (Figure 1 – Regional Location Plan). The April 6, 2018 letter stated, “The New York State Department of Environmental Conservation (NYSDEC) is undertaking a Statewide evaluation of remediation sites to better understand the risk posed to New Yorkers by 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). PFAS have historically not been evaluated at remediation sites, and 1,4-dioxane has not been evaluated at levels that are now thought to represent a health concern. This initiative is being undertaken as a result of these “emerging contaminants” having been found in a number of drinking water supplies in New York.”

In the April 6, 2018 letter, NYSDCE directed Rohm and Haas to conduct groundwater sampling analyses utilizing existing monitoring wells that are representative of the potential for the Former EMCA Site to be a source of 1,4-dioxane and PFAS. In order to meet this requirement, this Work Plan identifies wells proposed for sampling, sampling methods, and a sampling schedule. This Work Plan will be used in conjunction with the Site Management Plan (SMP) (URS Corporation, October 2010) which is the current document guiding groundwater sampling at the Former EMCA Site. Refer to the SMP for routine field work activities, field forms, and quality assurance procedures.

Scope of Work

To meet NYSDCE’s requirement to evaluate for the presence of 1,4-dioxane and PFAS at the Former EMCA Site, groundwater samples will be collected from three existing monitoring wells. These three wells were selected during a conference call on April 13, 2018 between representatives of the NYSDCE, Rohm and Haas, and AECOM. Figure 2 depicts the location of the proposed monitoring wells to be sampled and Table 1 provides the rationale for sampling. The monitoring wells to be sampled are listed below:

- GZ-06 – Upgradient location
- MW-04 and MW-05 – Downgradient locations

Samples will be collected and analyzed in accordance with the guidance information included with the April 6, 2018 NYSDEC correspondence, which included:

- *Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Wells Sample Protocol Revision 1.2* (June 29, 2016); and,
- *Groundwater Sampling for Emerging Contaminants* (April 2018).

This guidance information is provided as Attachment 1 to this Work Plan. The above summarized scope of work is presented in more detail in the Field Methodology section below.

Field Methodology

As described above, groundwater samples will be collected from three existing on-site monitoring wells (GZ-06, MW-04, and MW-05). Sampling procedures will concur with the sample protocol included with the April 6, 2018 NYSDEC letter (see Attachment 1). The groundwater sample from each well will be analyzed for the following parameters:

- 1,4-dioxane by EPA Method 8260C Selective Ion Monitoring (SIM) or 8270D SIM; and,
- 21 PFAS compounds by United States Environmental Protection Agency (EPA) Method 537 Modified (low level).

The samples will be collected by personnel trained to perform PFAS sampling. Recommended sample bottle requirements, preservation, and holding times are provided in Table 2. The estimated number of samples is shown in Table 3.

Since PFAS are to be analyzed, the following techniques will be used in conjunction with, or instead of, the procedures cited in the October 2010 SMP:

- Use only laboratory certified "PFAS-free" water for equipment decontamination.
- Use only Alconox[®] or Liquinox[®] soap for decontamination.
- No Sharpies will be used, only ball point pens.
- No waterproof field books/ laboratory notebooks, only loose paper on aluminum clipboards.
- Do not wear the following:
 - Personal hygiene items (cosmetics, lotions, moisturizers).
 - Sunscreens and insect repellants. Instead, wear long sleeve / light colored 100% cotton shirts and wide brimmed hats.
 - New or unwashed clothing.
 - Clothing washed with fabric softeners.
 - Treated clothing (i.e., waterproof, water resistant, stain-resistant, etc.).
 - Treated boots (i.e., waterproof, water resistant, stain-resistant, etc.).
 - Coated Tyvek[®] suits.
- Do not handle prepackaged food products immediately prior to sampling.
- Wear a new pair of disposable powderless nitrile gloves prior to sample collection.
- Do not use fluoropolymer bailers, pump bladders, tubing, valves and other pump parts.
- Do not use anything with Teflon[®].
- Use high-density polyethylene (HDPE) and silicon materials only.

- Do not use glass containers for sampling. Use only bottleware provided by the laboratory (i.e., polypropylene or HDPE sample bottles with unlined [no Teflon[®]] polypropylene or HDPE screw caps).
- Do not use aluminum foil.
- Do not filter samples in the field.

The PFAS Sampling Checklist, provided in Attachment 2, will be filled out prior to the beginning of the field sampling event and if there are staffing or associated sampling equipment changes.

Samples will be delivered to Eurofins Spectrum Analytical, Inc. (Eurofins), a New York State Department of Health Environmental Laboratory Approval Program (ELAP) approved analytical laboratory. Eurofin's ELAP certifications for PFOA and Perfluorooctanesulfonic acid (PFOS) in drinking water by EPA Method 537 and for 1,4-dioxane in non-potable water by EPA Methods 8260C SIM and 8270D SIM are provided in Attachment 3 for your reference. The standard laboratory turn-around time of 10 business days will be requested.

Purged groundwater will be transferred to appropriate on-site containers for appropriate characterization and disposal.

Quality Assurance

The contracted laboratory has stated that they can achieve the method detection limit of 2 nanograms/liter (ng/L) for each PFAS target analyte provided in the table below:

Chemical Name	Abbreviation	CAS Number
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorobutanoic acid	PFBA	275-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTriA/PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctanesulfonamide	FOSA	754-91-6
N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Additionally, the contracted laboratory has stated that they can achieve the method detection limit of 0.28 micrograms/liter ($\mu\text{g/L}$) for 1,4-dioxane.

Quality control samples [i.e., matrix spike/matrix spike duplicate, field duplicate, equipment blank, trip blank (1,4-dioxane), and ambient blank PFAS)] will be collected as summarized in Table 3. Equipment and ambient blanks will be collected with PFAS free water supplied by the laboratory. The trip blank will only be analyzed if there is evidence of contamination in the samples collected from the monitoring wells. The laboratory will provide the results in an Analytical Services Protocol (ASP) Category B equivalent data deliverable. A Data Usability Summary Report (DUSR) will be performed for all data acquired and included with the groundwater sampling summary report. All data from this sampling event will be uploaded to the NYSDEC EQUIS database.

Schedule

The collection of 1,4-dioxane and PFAS groundwater samples at the Former EMCA Site will occur after NYSDEC approval of this Work Plan. In accordance with the October 2010 SMP for the Former EMCA Site, groundwater sampling occurs on a semi-annual basis. It is proposed that the 1,4-dioxane and PFAS sampling described in this Work Plan be performed in the fourth quarter of 2018. NYSDEC will be provided at least seven day advance notice of the planned sampling date.

Reporting

Groundwater sample data will be provided as a stand-alone summary letter report upon the completion of groundwater sampling and data assessment activities. The letter report will be submitted to NYSDEC within 45 days of completion of the field work.

If you have any questions or comments, please contact me at (716) 856-5636.

Sincerely,



Kevin J. Shanahan
Project Manager
AECOM
T: 716-856-5636

Attachments:

Tables 1, 2, and 3

Figures 1 and 2

Attachment 1 – NYSDEC provided Sampling Guidance Documents

Attachment 2 – PFAS Sampling Checklist

Attachment 3 – Eurofins NYSDOH ELAP Certifications

cc: Jonathan Greco (NYSDEC)
Jacquelyn Nealon (DOH)

TABLES

Table 1: Rationale for Sampling

Table 2: Analytical Methods, Sample Container and Preservation Requirements, and Analytical Holding Times

Table 3: Summary of Samples and Analytical Parameters

Table 1

Rationale for Sampling

**Former EMCA Site
NYSDEC Registry Site No. 360025**

Site Name	Well ID	Rationale
Former EMCA Site (NYSDEC Registry Site No. 360025)	EPA Method SW846 8260C SIM or 8270D SIM	Upgradient Location
	MW-04 and MW-05	3.000

Table 2**Analytical Methods, Sample Container and Preservation Requirements, and Analytical Holding Times****Former EMCA Site
NYSDEC Registry Site No. 360025**

Matrix/Parameter	Laboratory to Perform Analyses	Method Number	Container	Minimum Sample Volume	Preservation	Holding Time*
I. Water						
1,4-Dioxane	Eurofins Spectrum Analytical, Inc.	EPA Method SW846 8260C SIM or 8270D SIM	3 - 40 mL Glass	40 mL	Cool, 4 ⁰ C	7 days for extraction, 40 days for analysis
Requested List of 21 PFAS Compounds	Eurofins Spectrum Analytical, Inc.	EPA Method 537 Modified	2 - 250 mL HDPE	250 mL	Cool, 4 ⁰ C	14 days for extraction, 28 days for analysis

NOTES:

* All holding times are from time of collection.

PFAS - per- and polyfluoroalkyl substances

Table 3**Summary of Samples and Analytical Parameters****Former EMCA Site
NYSDEC Registry Site No. 360025**

Parameter	Method Number		MS/MSD	Field Duplicate	Equipment Blanks*	Ambient Blanks	Trip Blanks	
1,4-Dioxane	EPA Method SW846 8260C SIM or 8270D SIM	3	1/1	1	1	--	1	8
Requested List of 21 PFAS Compounds	EPA Method 537 Modified	3	1/1	1	1	1	--	8

NOTES:

* One equipment blank will be collected for each type of sampling equipment used using certified PFAS-free water

-- Not applicable

MS/MSD - Matrix spike/matrix spike duplicate

PFAS - per- and polyfluoroalkyl substances

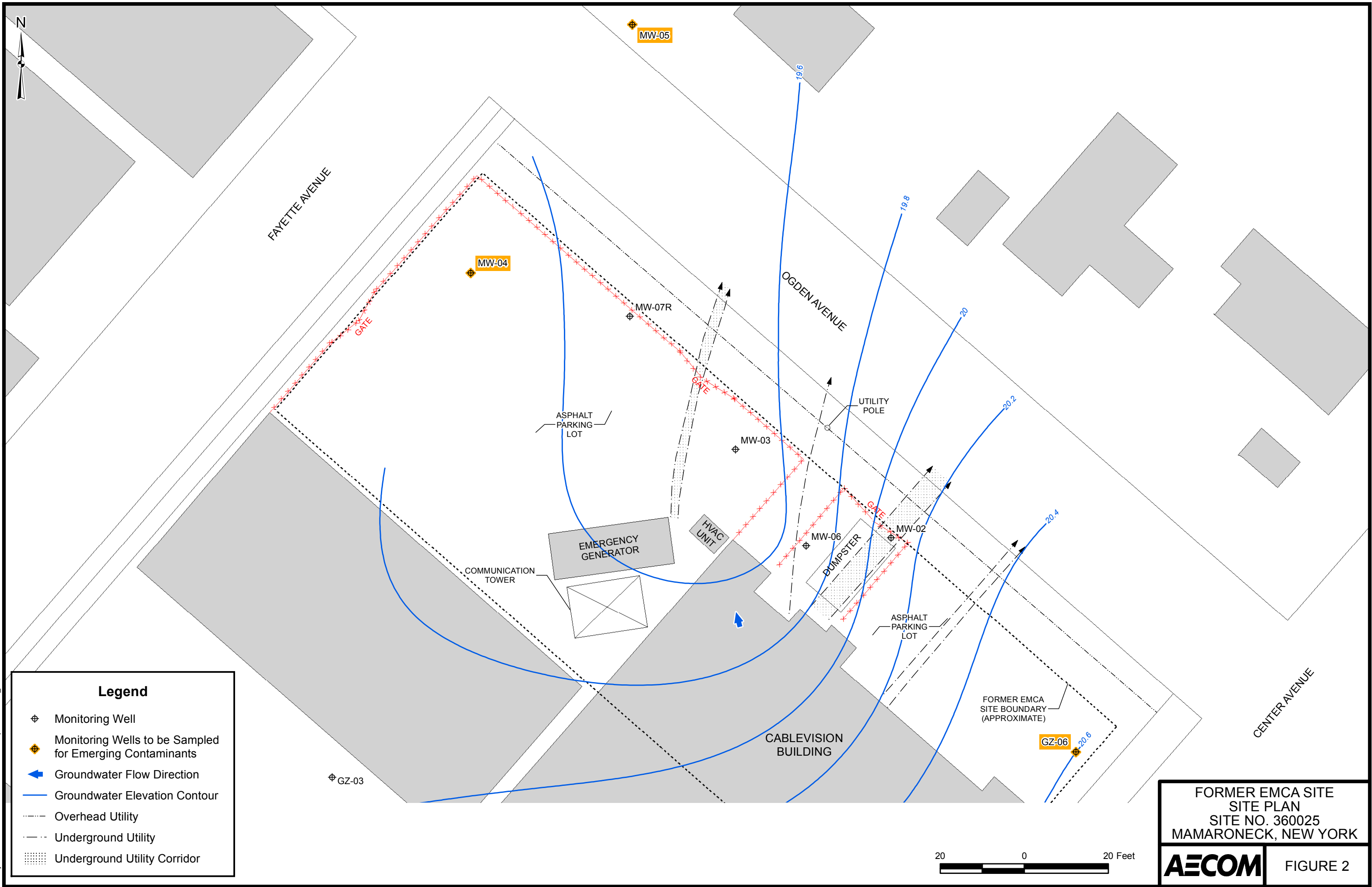
QA/QC - Quality Assurance/Quality Control

FIGURES

Figure 1: Site Plan

Figure 2: Monitoring Well Location Map

J:\Projects\1172730_00000\DB\GIS\2001\ArcMap\SITE PLAN_rev2.mxd 11/8/2018



FORMER EMCA SITE
SITE PLAN
SITE NO. 360025
MAMARONECK, NEW YORK

AECOM

FIGURE 2

ATTACHMENT 1

**Groundwater Sampling for Emerging Contaminants
Collection of Groundwater Samples for Perfluorooctanoic Acid
(PFOA) and Perfluorinated Compounds (PFCs) from Monitoring
Wells Sample Protocol**

Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Wells Sample Protocol

Samples collected using this protocol are intended to be analyzed for perfluorooctanoic acid (PFOA) and other perfluorinated compounds by Modified (Low Level) Test Method 537.

The procedure used must be consistent with the NYSDEC March 1991 Sampling Guidelines and Protocols http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf with the following materials limitations.

At this time acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate and polypropylene. Equipment blanks should be generated at least daily. Additional materials may be acceptable if pre-approved by NYSDEC. Requests to use alternate equipment should include clean equipment blanks. **NOTE: Grunfos pumps and bladder pumps are known to contain PFC materials (e.g. Teflon™ washers for Grunfos pumps and LDPE bladders for bladder pumps).** All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Standard two step decontamination using detergent and clean water rinse will be performed for equipment that does come in contact with PFC materials. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFC materials must be avoided. Many food and drink packaging materials and “plumbers thread seal tape” contain PFCs.

All clothing worn by sampling personnel must have been laundered multiple times. The sampler must wear nitrile gloves while filling and sealing the sample bottles.

Pre-cleaned sample bottles with closures, coolers, ice, sample labels and a chain of custody form will be provided by the laboratory.

1. Fill two pre-cleaned 500 mL HDPE or polypropylene bottle with the sample.
2. Cap the bottles with an acceptable cap and liner closure system.
3. Label the sample bottles.
4. Fill out the chain of custody.
5. Place in a cooler maintained at $4 \pm 2^{\circ}$ Celsius.

Collect one equipment blank for every sample batch, not to exceed 20 samples.

Collect one field duplicate for every sample batch, not to exceed 20 samples.

Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, not to exceed 20 samples.

Request appropriate data deliverable (Category A or B) and an electronic data deliverable.

Groundwater Sampling for Emerging Contaminants

April 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where “full TAL/TCL sampling” would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard “full TAL/TCL” sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable, and a DUSR should be prepared by a data validator, and the electronic data submission should meet the requirements provided at: <https://www.dec.ny.gov/chemical/62440.html> ,

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. However, laboratories analyzing environmental samples (ex. soil, sediments, and groundwater) are required, by DER, to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537 or ISO 25101.

Modified EPA Method 537 is the preferred method to use for groundwater samples due to the ability to achieve 2 ng/L (ppt) detection limits. If contract labs or work plans submitted by responsible parties indicate that they are not able to achieve similar reporting limits, the project manager should discuss this with a DER chemist. Note: Reporting limits for PFOA and PFOS should not exceed 2 ng/L.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other

sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.28 µg/l (ppb). ELAP offers certification for both EPA Methods 8260 and 8270. In order to get the appropriate detection limits, the lab would need to run either of these methods in “selective ion monitoring” (SIM) mode. DER is advising the use of method 8270, since this method provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents (we acknowledge that 8260 has been shown to have a higher recovery in some studies).

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	PFOS	1763-23-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluorooctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals

ATTACHMENT 2

PFAS Sampling Checklist

Figure 1 PFAS Sampling Checklist

Project No.:
 Project Location:
 Signature:
 Date:

Team Members

Yes	No	Description
		Has AECOM PFAS Sampling guidance been reviewed by all team members?
		Comments:
Yes	No	Has AECOM field sampling staff received needed training certification?
		Comments:
Yes	No	Was a briefing held for field sampling staff?
		Comments:
Yes	No	Were additional PFAS sampling instructions given to field sampling staff?
		Comments:
Yes	No	Have personal clothing and PPE requirements been followed by all field sampling staff?
		Comments:
Yes	No	Were lotions and sunscreen used for field sampling staff?
		Comment:

Sample Collection

Yes	No	Has a PFAS-free water source been identified?
		Comment
		Source of PFAS-free water:
Yes	No	Have all sampling items, parts and equipment been inspected to be free of PFAS?
		Comment:
Yes	No	Has sampling location sequence been communicated to avoid cross-contaminations?
		Comment:
Yes	No	Have drilling fluids been evaluated and shown to be free of PFAS?
		Comment:
Yes	No	Use of PFAS-free decontamination solution?
		Brand name of decontamination solution:
Yes	No	Have all field logs, notebooks, pens, labels been inspected, and do they meet AECOM PFAS sampling guidance requirements?
		Comment:
Yes	No	Have all sample shipping materials (ice, Ziploc® bags or similar style bags) been inspected, and do they meet AECOM PFAS sampling guidance requirements?
		Comment:
Yes	No	Have all blanks arrived at the site and will they be collected to verify cross-contamination?
		Comment:

Document Control

Yes	No	Have all variances from sampling guidance been documented?
		Comment:

Other Comments:

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ATTACHMENT 3

Eurofins NYSDOH ELAP Certifications

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2019
Issued April 01, 2018
Revised September 07, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

*is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:*

Acrylates

Acrolein (Propenal)	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260C
	EPA 624.1
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 625.1
	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2,3-Dichloroaniline	EPA 625.1
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4,4'-Methylenebis(2-chloroaniline)	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
a,a-Dimethylphenethylamine	EPA 8270D
Aniline	EPA 625.1
	EPA 8270D
Carbazole	EPA 625.1
	EPA 8270D

Amines

Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D
Propionitrile	EPA 8260C
Pyridine	EPA 625.1
	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 625.1
	EPA 8270D

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B

Serial No.: 58594

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



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All approved analytes are listed below:*

Chlorinated Hydrocarbon Pesticides

beta-BHC	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
	EPA 608.3
Diallate	EPA 8270D
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Isodrin	EPA 8270D

Chlorinated Hydrocarbon Pesticides

Kepone	EPA 8081B
	EPA 8270D
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 8081B
	EPA 608.3
PCNB	EPA 8270D
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
Hexachlorobenzene	EPA 625.1
	EPA 8270D
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270D

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All approved analytes are listed below:*

Chlorinated Hydrocarbons

Hexachloroethane	EPA 8260C
	EPA 625.1
	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270D
Pentachlorophenol	EPA 8151A

Demand

Biochemical Oxygen Demand	SM 5210B-2011
Carbonaceous BOD	SM 5210B-2011
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)

Dioxins and Furans

1,2,3,4,6,7,8,9-Octachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-diox	EPA 8290A

Dioxins and Furans

1,2,3,4,6,7,8,9-Octachlorodibenzo-p-diox	EPA 1613B
1,2,3,4,6,7,8-Heptachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,6,7,8-Heptachlorodibenzo-p-diox	EPA 8290A
	EPA 1613B
1,2,3,4,7,8,9-Heptachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,7,8-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
1,2,3,6,7,8-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
1,2,3,7,8,9-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
1,2,3,7,8-Pentachlorodibenzofuran	EPA 8290A
	EPA 1613B
2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:*

Dioxins and Furans

2,3,4,7,8-Pentachlorodibenzofuran	EPA 1613B
2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A
	EPA 1613B
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B

Dissolved Gases

Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175

Fuel Oxygenates

Di-isopropyl ether	EPA 8260C
Ethanol	EPA 1671
	EPA 8260C
	EPA 8015D
	EPA 8015C
Methyl tert-butyl ether	EPA 8260C
	EPA 8021B
	EPA 624.1
tert-amyl alcohol	EPA 8260C
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
	EPA 624.1
tert-butyl ethyl ether (ETBE)	EPA 8260C

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270D

Low Level Halocarbons

1,2-Dibromo-3-chloropropane, Low Level	EPA 8011
1,2-Dibromoethane, Low Level	EPA 8011

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM

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Low Level Polynuclear Aromatics

Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Metals I

Barium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Chromium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A

Metals I

Copper, Total	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	SM 3500-Fe B-2011 EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Lead, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Manganese, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Nickel, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Potassium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)

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Metals I		Metals II	
Silver, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Beryllium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Sodium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Chromium VI	EPA 218.6, Rev. 3.3 (1994) EPA 7196A EPA 7199 SM 3500-Cr B-2011
Strontium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Mercury, Total	EPA 245.1, Rev. 3.0 (1994) EPA 7470A
Metals II		Selenium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Aluminum, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Vanadium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Zinc, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Metals III	
		Cobalt, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C

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Metals III		Mineral	
Cobalt, Total	EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Chloride	EPA 9056A
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Fluoride, Total	EPA 300.0, Rev. 2.1 (1993) SM 4500-F C-2011 EPA 9056A
Thallium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Hardness, Total	SM 2340C-2011 SM 2340B-2011
Tin, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Sulfate (as SO ₄)	EPA 300.0, Rev. 2.1 (1993) EPA 9056A
Titanium, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Miscellaneous	
Uranium (Mass)	EPA 6020A EPA 200.8, Rev. 5.4 (1994)	Boron, Total	EPA 200.7, Rev. 4.4 (1994) EPA 6010C EPA 6020A EPA 200.8, Rev. 5.4 (1994)
Mineral		Bromide	EPA 300.0, Rev. 2.1 (1993) EPA 9056A
Acidity	SM 2310B-2011	Color	SM 2120B-2011
Alkalinity	SM 2320B-2011	Cyanide, Available	OIA-1677-09 SM 4500-CN G-2011
Chloride	EPA 300.0, Rev. 2.1 (1993) SM 4500-Cl- C-2011	Cyanide, Free	OIA-1677-09
		Cyanide, Total	EPA 335.4, Rev. 1.0 (1993) EPA 9012B ASTM D7511-12
		Formaldehyde	EPA 8315A
		Oil and Grease Total Recoverable (HEM)	EPA 1664A EPA 1664B

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Miscellaneous

Organic Carbon, Total	SM 5310C-2011 EPA 9060A
Perchlorate	EPA 6850
Phenols	EPA 420.4, Rev. 1.0 (1993) EPA 9066
Silica, Dissolved	SM 4500-SiO ₂ C-2011
Specific Conductance	SM 2510B-2011 EPA 9050A
Sulfide (as S)	SM 4500-S ₂ - F-2011 SM 4500-S ₂ - D-2011
Surfactant (MBAS)	SM 5540C-2011
Total Recoverable Petroleum Hydrocarbon	EPA 1664A
Turbidity	EPA 180.1, Rev. 2.0 (1993)

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270D EPA 8330A
1,3-Dinitrobenzene	EPA 8270D EPA 8330A
1,4-Naphthoquinone	EPA 8270D
2,4,6-Trinitrotoluene	EPA 8330A
2,4-Dinitrotoluene	EPA 625.1 EPA 8270D EPA 8330A
2,6-Dinitrotoluene	EPA 625.1 EPA 8270D

Nitroaromatics and Isophorone

2,6-Dinitrotoluene	EPA 8330A
2-Amino-4,6-dinitrotoluene	EPA 8330A
	EPA 8330B
2-Nitrotoluene	EPA 8330A
3,5-Dinitroaniline	EPA 8330B
3-Nitrotoluene	EPA 8330A
4-Amino-2,6-dinitrotoluene	EPA 8330A
4-Nitroquinoline-1-oxide	EPA 8270D
4-Nitrotoluene	EPA 8330A
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330A
Isophorone	EPA 625.1 EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330A
Nitrobenzene	EPA 625.1 EPA 8270D EPA 8330A
Nitroglycerine	EPA 8330B
Octahydro-tetranitro-tetrazocine	EPA 8330A
Pentaerythritol tetranitrate	EPA 8330B

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 625.1 EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625.1

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Nitrosoamines

N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D

Nutrient

Ammonia (as N)	EPA 350.1, Rev. 2.0 (1993)
	SM 4500-NH3 D-2011 or E-2011
Kjeldahl Nitrogen, Total	EPA 351.2, Rev. 2.0 (1993)
Nitrate (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Nitrate-Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Orthophosphate (as P)	EPA 365.3 (Issued 1978)
	SM 4500-P E-2011
Phosphorus, Total	EPA 365.1, Rev. 2.0 (1993)
	SM 4500-P (F-H)-2011

Organophosphate Pesticides

Atrazine	EPA 8141B
	EPA 8270D

Organophosphate Pesticides

Azinphos methyl	EPA 8141B
Chlorpyrifos	EPA 8141B
Demeton-O	EPA 8141B
Demeton-S	EPA 8141B
Diazinon	EPA 8141B
Dimethoate	EPA 8270D
Disulfoton	EPA 8141B
	EPA 8270D
Famphur	EPA 8141B
	EPA 8270D
Malathion	EPA 8141B
Parathion ethyl	EPA 8141B
	EPA 8270D
Parathion methyl	EPA 8141B
	EPA 8270D
Phorate	EPA 8141B
	EPA 8270D
Simazine	EPA 8141B
Sulfotep	EPA 8270D
Thionazin	EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D
	EPA 8015C
Gasoline Range Organics	EPA 8015D
	EPA 8015C

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Phthalate Esters

Benzyl butyl phthalate	EPA 625.1
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
Diethyl phthalate	EPA 625.1
	EPA 8270D
Dimethyl phthalate	EPA 625.1
	EPA 8270D
Di-n-butyl phthalate	EPA 625.1
	EPA 8270D
Di-n-octyl phthalate	EPA 625.1
	EPA 8270D

Polychlorinated Biphenyls

Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3

Polychlorinated Biphenyls

Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
PCB 1	EPA 1668A
PCB 10	EPA 1668A
PCB 100	EPA 1668A
PCB 101	EPA 1668A
PCB 102	EPA 1668A
PCB 103	EPA 1668A
PCB 104	EPA 1668A
PCB 105	EPA 1668A
PCB 106	EPA 1668A
PCB 107	EPA 1668A
PCB 108	EPA 1668A
PCB 109	EPA 1668A
PCB 11	EPA 1668A
PCB 110	EPA 1668A
PCB 111	EPA 1668A
PCB 112	EPA 1668A
PCB 113	EPA 1668A
PCB 114	EPA 1668A
PCB 115	EPA 1668A
PCB 116	EPA 1668A
PCB 117	EPA 1668A
PCB 118	EPA 1668A

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Polychlorinated Biphenyls

PCB 119	EPA 1668A
PCB 12	EPA 1668A
PCB 120	EPA 1668A
PCB 121	EPA 1668A
PCB 122	EPA 1668A
PCB 123	EPA 1668A
PCB 124	EPA 1668A
PCB 125	EPA 1668A
PCB 126	EPA 1668A
PCB 127	EPA 1668A
PCB 128	EPA 1668A
PCB 129	EPA 1668A
PCB 13	EPA 1668A
PCB 130	EPA 1668A
PCB 131	EPA 1668A
PCB 132	EPA 1668A
PCB 133	EPA 1668A
PCB 134	EPA 1668A
PCB 135	EPA 1668A
PCB 136	EPA 1668A
PCB 137	EPA 1668A
PCB 138	EPA 1668A
PCB 139	EPA 1668A
PCB 14	EPA 1668A
PCB 140	EPA 1668A
PCB 141	EPA 1668A

Polychlorinated Biphenyls

PCB 142	EPA 1668A
PCB 143	EPA 1668A
PCB 144	EPA 1668A
PCB 145	EPA 1668A
PCB 146	EPA 1668A
PCB 147	EPA 1668A
PCB 148	EPA 1668A
PCB 149	EPA 1668A
PCB 15	EPA 1668A
PCB 150	EPA 1668A
PCB 151	EPA 1668A
PCB 152	EPA 1668A
PCB 153	EPA 1668A
PCB 154	EPA 1668A
PCB 155	EPA 1668A
PCB 156	EPA 1668A
PCB 157	EPA 1668A
PCB 158	EPA 1668A
PCB 159	EPA 1668A
PCB 16	EPA 1668A
PCB 160	EPA 1668A
PCB 161	EPA 1668A
PCB 162	EPA 1668A
PCB 163	EPA 1668A
PCB 164	EPA 1668A
PCB 165	EPA 1668A

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All approved analytes are listed below:*

Polychlorinated Biphenyls

PCB 166	EPA 1668A
PCB 167	EPA 1668A
PCB 168	EPA 1668A
PCB 169	EPA 1668A
PCB 17	EPA 1668A
PCB 170	EPA 1668A
PCB 171	EPA 1668A
PCB 172	EPA 1668A
PCB 173	EPA 1668A
PCB 174	EPA 1668A
PCB 175	EPA 1668A
PCB 176	EPA 1668A
PCB 177	EPA 1668A
PCB 178	EPA 1668A
PCB 179	EPA 1668A
PCB 18	EPA 1668A
PCB 180	EPA 1668A
PCB 181	EPA 1668A
PCB 182	EPA 1668A
PCB 183	EPA 1668A
PCB 184	EPA 1668A
PCB 185	EPA 1668A
PCB 186	EPA 1668A
PCB 187	EPA 1668A
PCB 188	EPA 1668A
PCB 189	EPA 1668A

Polychlorinated Biphenyls

PCB 19	EPA 1668A
PCB 190	EPA 1668A
PCB 191	EPA 1668A
PCB 192	EPA 1668A
PCB 193	EPA 1668A
PCB 194	EPA 1668A
PCB 195	EPA 1668A
PCB 196	EPA 1668A
PCB 197	EPA 1668A
PCB 198	EPA 1668A
PCB 199	EPA 1668A
PCB 2	EPA 1668A
PCB 20	EPA 1668A
PCB 200	EPA 1668A
PCB 201	EPA 1668A
PCB 202	EPA 1668A
PCB 203	EPA 1668A
PCB 204	EPA 1668A
PCB 205	EPA 1668A
PCB 206	EPA 1668A
PCB 207	EPA 1668A
PCB 208	EPA 1668A
PCB 209	EPA 1668A
PCB 21	EPA 1668A
PCB 22	EPA 1668A
PCB 23	EPA 1668A

Serial No.: 58594

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2019
Issued April 01, 2018
Revised September 07, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

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National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:*

Polychlorinated Biphenyls

PCB 24	EPA 1668A
PCB 25	EPA 1668A
PCB 26	EPA 1668A
PCB 27	EPA 1668A
PCB 28	EPA 1668A
PCB 29	EPA 1668A
PCB 3	EPA 1668A
PCB 30	EPA 1668A
PCB 31	EPA 1668A
PCB 32	EPA 1668A
PCB 33	EPA 1668A
PCB 34	EPA 1668A
PCB 35	EPA 1668A
PCB 36	EPA 1668A
PCB 37	EPA 1668A
PCB 38	EPA 1668A
PCB 39	EPA 1668A
PCB 4	EPA 1668A
PCB 40	EPA 1668A
PCB 41	EPA 1668A
PCB 42	EPA 1668A
PCB 43	EPA 1668A
PCB 44	EPA 1668A
PCB 45	EPA 1668A
PCB 46	EPA 1668A
PCB 47	EPA 1668A

Polychlorinated Biphenyls

PCB 48	EPA 1668A
PCB 49	EPA 1668A
PCB 5	EPA 1668A
PCB 50	EPA 1668A
PCB 51	EPA 1668A
PCB 52	EPA 1668A
PCB 53	EPA 1668A
PCB 54	EPA 1668A
PCB 55	EPA 1668A
PCB 56	EPA 1668A
PCB 57	EPA 1668A
PCB 58	EPA 1668A
PCB 59	EPA 1668A
PCB 6	EPA 1668A
PCB 60	EPA 1668A
PCB 61	EPA 1668A
PCB 62	EPA 1668A
PCB 63	EPA 1668A
PCB 64	EPA 1668A
PCB 65	EPA 1668A
PCB 66	EPA 1668A
PCB 67	EPA 1668A
PCB 68	EPA 1668A
PCB 69	EPA 1668A
PCB 7	EPA 1668A
PCB 70	EPA 1668A

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Polychlorinated Biphenyls

PCB 71	EPA 1668A
PCB 72	EPA 1668A
PCB 73	EPA 1668A
PCB 74	EPA 1668A
PCB 75	EPA 1668A
PCB 76	EPA 1668A
PCB 77	EPA 1668A
PCB 78	EPA 1668A
PCB 79	EPA 1668A
PCB 8	EPA 1668A
PCB 80	EPA 1668A
PCB 81	EPA 1668A
PCB 82	EPA 1668A
PCB 83	EPA 1668A
PCB 84	EPA 1668A
PCB 85	EPA 1668A
PCB 86	EPA 1668A
PCB 87	EPA 1668A
PCB 88	EPA 1668A
PCB 89	EPA 1668A
PCB 9	EPA 1668A
PCB 90	EPA 1668A
PCB 91	EPA 1668A
PCB 92	EPA 1668A
PCB 93	EPA 1668A
PCB 94	EPA 1668A

Polychlorinated Biphenyls

PCB 95	EPA 1668A
PCB 96	EPA 1668A
PCB 97	EPA 1668A
PCB 98	EPA 1668A
PCB 99	EPA 1668A

Polynuclear Aromatics

2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625.1
	EPA 8270D
Acenaphthylene	EPA 625.1
	EPA 8270D
Anthracene	EPA 625.1
	EPA 8270D
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
Benzo(a)pyrene	EPA 625.1
	EPA 8270D
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
Benzo(ghi)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D

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Polynuclear Aromatics

Chrysene	EPA 625.1 EPA 8270D
Dibenzo(a,h)anthracene	EPA 625.1 EPA 8270D
Fluoranthene	EPA 625.1 EPA 8270D
Fluorene	EPA 625.1 EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625.1 EPA 8270D
Naphthalene	EPA 625.1 EPA 8270D
Phenanthrene	EPA 625.1 EPA 8270D
Pyrene	EPA 625.1 EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 625.1 EPA 8270D
2,4,6-Trichlorophenol	EPA 625.1 EPA 8270D
2,4-Dichlorophenol	EPA 625.1 EPA 8270D
2,4-Dimethylphenol	EPA 625.1

Priority Pollutant Phenols

2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 625.1 EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 625.1 EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625.1 EPA 8270D
2-Methylphenol	EPA 625.1 EPA 8270D
2-Nitrophenol	EPA 625.1 EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1 EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 625.1 EPA 8270D
Pentachlorophenol	EPA 625.1 EPA 8270D
Phenol	EPA 625.1 EPA 8270D

Residue

Settleable Solids	SM 2540 F-2011
Solids, Total	SM 2540 B-2011

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All approved analytes are listed below:

Residue

Solids, Total Dissolved	SM 2540 C-2011
Solids, Total Suspended	SM 2540 D-2011

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 625.1
	EPA 8270D
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
	EPA 8315A
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
n-Decane	EPA 625.1
n-Octadecane	EPA 625.1

Semi-Volatile Organics

O,O,O-Triethyl phosphorothioate	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260C
	EPA 624.1
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 8021B
	EPA 624.1
	EPA 602
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
	EPA 624.1
Ethyl benzene	EPA 8260C
	EPA 8021B

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Volatile Aromatics

Ethyl benzene	EPA 624.1
	EPA 602
Isopropylbenzene	EPA 8260C
	EPA 8021B
m/p-Xylenes	EPA 8260C
	EPA 624.1
	EPA 602
Naphthalene, Volatile	EPA 8260C
	EPA 624.1
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1
	EPA 602
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 8021B
	EPA 624.1
	EPA 602
Total Xylenes	EPA 8260C
	EPA 8021B
	EPA 624.1

Volatile Aromatics

Total Xylenes	EPA 602
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Volatile Chlorinated Organics

Benzyl chloride	EPA 8260C
Epichlorohydrin	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethene	EPA 8260C
	EPA 624.1
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 624.1

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
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Volatile Halocarbons

1,2-Dichloropropane	EPA 8260C EPA 624.1
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C EPA 624.1
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C EPA 624.1
Bromoform	EPA 8260C EPA 624.1
Bromomethane	EPA 8260C EPA 624.1
Carbon tetrachloride	EPA 8260C EPA 624.1
Chloroethane	EPA 8260C EPA 624.1
Chloroform	EPA 8260C EPA 624.1
Chloromethane	EPA 8260C EPA 624.1
cis-1,2-Dichloroethene	EPA 8260C EPA 624.1
cis-1,3-Dichloropropene	EPA 8260C

Volatile Halocarbons

cis-1,3-Dichloropropene	EPA 624.1
Dibromochloromethane	EPA 8260C EPA 624.1
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C EPA 624.1
Tetrachloroethene	EPA 8260C EPA 624.1
trans-1,2-Dichloroethene	EPA 8260C EPA 624.1
trans-1,3-Dichloropropene	EPA 8260C EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C EPA 624.1
Trichlorofluoromethane	EPA 8260C EPA 624.1
Vinyl chloride	EPA 8260C EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260C
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Volatiles Organics

1,4-Dioxane	EPA 8260C SIM
	EPA 8270D
	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
	EPA 624.1
Acetone	EPA 8260C
	EPA 624.1
Acetonitrile	EPA 1671
	EPA 8260C
	EPA 624.1
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Diethylamine	EPA 1671
Dimethyl sulfoxide	EPA 1671
Ethyl Acetate	EPA 1666
	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
	EPA 8015D
	EPA 8015C
Isobutyraldehyde	EPA 1666
Isopropanol	EPA 8260C

Volatiles Organics

Isopropyl Acetate	EPA 1666
Methanol	EPA 1671
	EPA 8015D
	EPA 8015C
Methyl acetate	EPA 8260C
Methyl cellosolve (2-Methoxyethanol)	EPA 1671
Methyl cyclohexane	EPA 8260C
Methyl formate	EPA 1666
n-Amyl Acetate	EPA 1666
n-Amyl alcohol	EPA 1666
n-Butanol	EPA 8260C
n-Butyl Acetate	EPA 1666
n-Propanol	EPA 1671
o-Toluidine	EPA 8270D
Tetrahydrofuran	EPA 1666
	EPA 8260C
	EPA 624.1
Triethylamine	EPA 1671
Vinyl acetate	EPA 8260C
	EPA 624.1

Sample Preparation Methods

SM 4500-P B(5)-2011
EPA 5030C
EPA 200.2
EPA 3010A

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All approved analytes are listed below:

Sample Preparation Methods

EPA 3005A
EPA 3510C
EPA 3520C
EPA 3020A
SM 4500-NH3 B-2011
SM 4500-F B-2011

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Bacteriology

Coliform, Total / E. coli (Qualitative)	Colilert
Heterotrophic Plate Count	SM 18-22 9215B (-04)

Disinfection By-products

Bromide	EPA 300.0 Rev. 2.1
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Dissolved Gases

Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175

Fuel Additives

Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2

Metals I

Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4

Metals I

Manganese, Total	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4

Metals III

Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Methylcarbamate Pesticides

3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1
Aldicarb Sulfoxide	EPA 531.1

Serial No.: 58518

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2019
Issued April 01, 2018
Revised July 23, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

*is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:*

Methylcarbamate Pesticides

Carbaryl	EPA 531.1
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1

Miscellaneous

2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 1613B
Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Di (2-ethylhexyl) adipate	EPA 525.2
Hexachlorobenzene	EPA 525.2
Hexachlorocyclopentadiene	EPA 525.2
Methyl iodide	EPA 524.2
Organic Carbon, Total	SM 21-22 5310C (-00)
Surfactant (MBAS)	SM 18-22 5540C (-00)
Turbidity	SM 18-22 2130 B (-01) EPA 180.1 Rev. 2.0

Non-Metals

Alkalinity	SM 18-22 2320B (-97)
Calcium Hardness	SM 18-22 2340C (-97) SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 18-22 2120B (-01)
Cyanide	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1 SM 18-22 4500-F C (-97)

Non-Metals

Nitrate (as N)	EPA 353.2 Rev. 2.0 EPA 300.0 Rev. 2.1
Nitrite (as N)	EPA 353.2 Rev. 2.0 EPA 300.0 Rev. 2.1
Orthophosphate (as P)	SM 18-22 4500-P E (-99)
Silica, Dissolved	SM 20-22 4500-SiO ₂ C (-97)
Solids, Total Dissolved	SM 18-22 2540C (-97)
Specific Conductance	SM 18-22 2510B (-97)
Sulfate (as SO ₄)	EPA 300.0 Rev. 2.1

Organohalide Pesticides

Alachlor	EPA 525.2
Atrazine	EPA 525.2
Butachlor	EPA 525.2
Dieldrin	EPA 525.2
Endrin	EPA 525.2
Heptachlor	EPA 525.2
Heptachlor epoxide	EPA 525.2
Lindane	EPA 525.2
Methoxychlor	EPA 525.2
Metolachlor	EPA 525.2
Metribuzin	EPA 525.2
Propachlor	EPA 525.2
Simazine	EPA 525.2

Perfluorinated Alkyl Acids

Perfluorooctanesulfonic acid (PFOS)	EPA 537
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Perfluorinated Alkyl Acids

Perfluorooctanoic acid (PFOA) EPA 537

Trihalomethanes

Bromodichloromethane EPA 524.2
Bromoform EPA 524.2
Chloroform EPA 524.2
Dibromochloromethane EPA 524.2
Total Trihalomethanes EPA 524.2

Volatile Aromatics

1,2,3-Trichlorobenzene EPA 524.2
1,2,4-Trichlorobenzene EPA 524.2
1,2,4-Trimethylbenzene EPA 524.2
1,2-Dichlorobenzene EPA 524.2
1,3,5-Trimethylbenzene EPA 524.2
1,3-Dichlorobenzene EPA 524.2
1,4-Dichlorobenzene EPA 524.2
2-Chlorotoluene EPA 524.2
4-Chlorotoluene EPA 524.2
Benzene EPA 524.2
Bromobenzene EPA 524.2
Chlorobenzene EPA 524.2
Ethyl benzene EPA 524.2
Hexachlorobutadiene EPA 524.2
Isopropylbenzene EPA 524.2
n-Butylbenzene EPA 524.2
n-Propylbenzene EPA 524.2

Volatile Aromatics

p-Isopropyltoluene (P-Cymene) EPA 524.2
sec-Butylbenzene EPA 524.2
Styrene EPA 524.2
tert-Butylbenzene EPA 524.2
Toluene EPA 524.2
Total Xylenes EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane EPA 524.2
1,1,1-Trichloroethane EPA 524.2
1,1,2,2-Tetrachloroethane EPA 524.2
1,1,2-Trichloroethane EPA 524.2
1,1-Dichloroethane EPA 524.2
1,1-Dichloroethene EPA 524.2
1,1-Dichloropropene EPA 524.2
1,2,3-Trichloropropane EPA 524.2
1,2-Dichloroethane EPA 524.2
1,2-Dichloropropane EPA 524.2
1,3-Dichloropropane EPA 524.2
2,2-Dichloropropane EPA 524.2
Bromochloromethane EPA 524.2
Bromomethane EPA 524.2
Carbon tetrachloride EPA 524.2
Chloroethane EPA 524.2
Chloromethane EPA 524.2
cis-1,2-Dichloroethene EPA 524.2

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Volatile Halocarbons

cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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