February 16, 2024

Mr. Stephen A. Watts
New York State Department of Environmental Conservation
Region 2
47-40 21st Street
Long Island City, New York 11101

Re: SPDES Permit Modification – Response to Comments (Sections I and II)
Groundwater Treatment Facility Consolidation
ExxonMobil Oil Corporation
ExxonMobil Greenpoint Petroleum Remediation Project
Greenpoint, Brooklyn, New York
SPDES Permit # NY0267724

Dear Mr. Watts:

Roux Environmental Engineering and Geology, D.P.C. (Roux), on behalf of ExxonMobil Environmental and Property Solutions Company, on behalf of ExxonMobil Oil Corporation (collectively, ExxonMobil), has prepared this response to the January 26, 2024 comment letter provided by the New York State Department of Environmental Conservation (NYSDEC) regarding the State Pollutant Discharge Elimination System (SPDES) Permit Modification Application Package for the ExxonMobil Greenpoint Petroleum Remediation Project (EMGPRP), dated December 11, 2023. The SPDES Permit Modification Package proposed a modification of the existing SPDES Permit No. NY0267724 to allow for consolidation of the two existing groundwater treatment facilities into one new groundwater treatment facility to be constructed at 38 Varick Street, Brooklyn, New York, where the combined flow from all existing recovery wells will be sent for processing with final discharge to Outfall 002.

This response to comments letter addresses Section I (NY-2C) and Section II (Additional Submittals) of the NYSDEC's comments. Section III of the NYSDEC's comment will be addressed in a separate submittal. The format of this response is to provide the NYSDEC comment in italic font, followed by Roux's response. The comment and response are provided below.

I. NY-2C:

a. Part II Section 9 Item 1: *The applicant indicated that no Whole Effluent Toxicity (WET) testing was performed in the past three years. The currently effective permit has WET testing with a schedule of testing to be performed in years ending in 0 and 5. WET testing should have been performed in 2020. Please revise this section of the application and provide that data.*

Response to Comment I.a.:

WET testing was carried out during March, June, September, and November of 2020, more than three years prior to submittal of SPDES Permit Modification Application Package in December 2023. The WET testing results previously submitted to NYSDEC in 2020 has been attached to this response for your records as Attachment A. Based on NYSDEC's comment, the response has been revised to "yes" in Part II Section 9.1 of the NY-2C form; and Part II Section 9.2 has been revised to include the required information. A revised NY-2C form has been attached to this letter as Attachment B.

0172.0030Y093.5093/LR

b. Part II Section 12 Item 2: *Please ensure that the role of personnel signing the application form aligns with requirements listed in 40 CFR 122.22(a).*

Response to Comment I.b.:

Michael Burghardt is the responsible corporate officer certifying the application and is authorized to make management decisions that govern the operation of the regulated facility in accordance with 40 CFR 122.22(a).

c. Table A Section 1: *Mercury samples were analyzed using EPA Method 245.1. This method is not sufficiently sensitive; therefore, these mercury results cannot be accepted. Please resample and ensure that samples are analyzed using method 1631E.*

Response to Comment I.c.:

Subsequent sampling of Outfall 01A, and Outfall 002 was carried out in January 2024 and analyzed for Low level Mercury via EPA Method 1631E at Eurofins Environmental Testing Labs. A revised Table A has been included within the attached revised NY-2C application (Attachment B), reflecting the reported results associated with the January 2024 sampling event. Lab reports associated with these sampling events have been included as Attachment C.

d. Table A Section 2: *No effluent data was provided for Table A Section 2. Please sample and provide results. Provided attached.*

Response to Comment I.d:

Subsequent sampling of Outfall 01A and Outfall 002 was carried out on November 28-30th, 2023 and analyzed for PFAS via EPA Method 1633, 1,4 -Dioxane via EPA Method 8270E_SIM and Total Organic Compounds (TOC) via EPA Method 9060A at Eurofins Environmental Testing Labs. A revised Table A Section 2 has been included within the attached revised NY-2C application (Attachment B), reflecting the reported results associated with the November sampling events. Lab reports associated with these sampling events have been included as Attachment C.

e. Table F and Water Treatment Chemical (WTC) Notification Forms: *Table F lists three separate WTCs; however, three notification forms were submitted in duplicate for one WTC. Please submit one notification form for each WTC.*

Response to Comment I.e:

The notification forms for each WTC - Redux E50, Redux P-853 and Redux 375 - have been attached to this response letter as Attachment D for your records.

II. Additional Submittals:

a. Detailed Mixing Zone Form – Outfall Location & Configuration: *Under the section titled "Describe the outfall (location, size, configuration, condition of the structure)" Outfall 002 is described as a 6" diameter PVC pipe. However, under the section titled "Option #1: Bank Discharge" the outfall pipe is described as a 36" diameter pipe. Please clarify.*

Response to Comment II.a.:

Detailed Mixing Zone Form section "Outfall Location and Configuration," specifically the section titled "Option #1: Bank Discharge" has been revised to correctly describe the discharge pipe as being 6 inches in diameter. A revised "Detailed Mixing Zone Form has been attached to this letter as Attachment E for your records.

b. *Consideration of Future Physical Climate Risk:* *Please fill out this supplemental form which can be found on DEC's SPDES Application Procedures and Forms webpage (*https://dec.ny.gov/sites/default/files/2023-11/spdesclimaterisk.pdf*).*

Response to Comment II.b.:

The Supplemental form 70-0117 "Demonstration: Consideration of Future Physical Climate Risk," has been completed and attached to this response letter as Attachment F.

c. *Long Island Well Permit Modification**: Please submit a Long Island Well permit modification to reflect the proposed revised locations of the groundwater extraction wells and any other changes to the activities authorized in NYSDEC Permit #2-6101-00107/00027.*

Response to Comment II.c.:

As per email correspondence from NYSDEC dated February 9, 2024, a Long Island Well Permit Modification will be submitted at a later date following resolution of a proposal to relocate two existing recovery wells, RW-16 and RW-29. Additional details of this proposal are provided in the Recovery Well RW-16 and RW-29 Relocation Request dated September 18, 2023, to which comments were provided from the NYSDEC on January 9, 2024. Relocation of these two recovery wells will not affect the scope of the SPDES Permit Modification.

Should you have any questions, or comments relating to any part of this submission, please do not hesitate to reach out to us at your convenience.

Respectfully submitted,

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.

Courtney Lind
Senior Engineer

Justin Kennedy, P.E.
Senior Engineer

Andrew Baris, P.G.
Executive Vice President/Principal Hydrogeologist

cc: Kirsten Jedd-Barry, NYSDEC – DOW
Lorraine Gregory, NYSDEC – DOW
Caitlyn Nichols, NYSDEC – DOW
Atiqur Rahman, NYSDEC – DOW
Heidi Dudek, NYSDEC – DER
Rafi Alam, NYSDEC – DER
Deborah Gorman, NYSDEC
Michael Murphy, NYSDEC
Andrew G. Frank, New York State Office of the Attorney General
Todd Ommen, Pace University School of Law

Richard Webster, Riverkeeper
Mike Dulong, Riverkeeper
Michael Burghardt, ExxonMobil
Rene Gonzalez, ExxonMobil
Christopher Proce, Roux
Alexander Policastro, Roux

Attachment A

WET Testing Results

E&PS

April 28, 2020

New York State Department of Environmental Conservation
Toxicity Testing Unit
Bureau of Watershed Assessment and Management
625 Broadway, Fourth Floor
Albany, New York 12233-7013

Attention: Ms. Nicole Wright

Re: Acute Whole Effluent Toxicity Testing Report – March 2020
SPDES Permit No. NY-0267724
ExxonMobil Greenpoint Petroleum Remediation Project
Greenpoint, Brooklyn, New York

Dear Ms. Wright:

ExxonMobil Oil Corporation is submitting this Acute Whole Effluent Toxicity (WET) Testing Report for the On-Site Free-Product Recovery System (RCS) and the Off-Site Free-Product Recovery System (ORS) for the First Quarter of 2020, in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) Permit, No. NY-0267724, issued by the NYSDEC, effective April 1, 2015.

American Aquatic Testing, Inc., on behalf of Alpha Analytical, performed two static-renewal acute toxicity tests for the Outfalls 001 and 002 by exposing mysid (i.e., *Mysidopsis bahia*) and sheepshead minnow (i.e., *Cyprinodon variegatus*) to the samples for forty-eight hours in a static-renewal test system. All results indicate no exceedances, as shown in the laboratory analytical results attached hereto.

The Outfall 001 discharge was sampled on March 25, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 378 gpm, or 0.54 MGD. The Outfall 001 discharge was sampled again on March 26, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 416 gpm, or 0.60 MGD. The Outfall 001 discharge sample results indicate no exceedances of toxicity limits with a toxicity unit-acute (TUa) of 0.3 as there is no statistically significant toxicity in 100% effluent compared to the control, as shown in the attached laboratory analytical results.

The Outfall 002 discharge was sampled on March 25, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 255 gpm, or 0.37 MGD. The Outfall 002 discharge was sampled again on March 26, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 265 gpm, or 0.38 MGD. The Outfall 002 discharge sample results indicate no exceedances of toxicity limits with a toxicity unit-acute (TUa) of 0.3 as there is no statistically significant toxicity in 100% effluent compared to the control, as shown in the attached laboratory analytical results.

Should there be any questions or comments on this submission, please do not hesitate to contact me at 718-404-0652.

Sincerely,

Frank Messina
Project Manager

Attachments

cc: Randy Whitcher, NYSDEC, Division of Environmental Remediation – Albany, NY
Regional Water Engineer (NYSDEC Region 2) – Long Island City, NY
04/Brooklyn Public Library, Brooklyn Collection – Brooklyn, NY
Justin Kennedy, P.E., Roux Environmental Engineering and Geology, D.P.C.

Outfall 001 WET Testing Results
First Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		07 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	03/26/20	COMPLETION DATE:	03/28/20
INITIATION TIME:	4:30 pm	COMPLETION TIME:	4:30 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — Date: 04/08/20
President, Laboratory Director

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 03/26/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 03/26/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1767.8 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-01 (001)

Species: C. variegatus

Hatch Date: 3-19-20

Dilution Water: ASW

Start Date/Time: 3-26-20 1630

End Date/Time: 3-28-20 1630

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.3	7.4	7.2	21.0	21.0	21.0	10	10	10
	B	7.3	7.4	7.2	21.0	21.0	21.0	10	10	10
12.5	A	7.4	7.4	7.2	21.0	21.0	21.0	10	10	10
	B	7.4	7.4	7.2	21.0	21.0	21.0	10	10	10
25	A	7.5	7.5	7.2	21.0	21.0	21.0	10	10	10
	B	7.5	7.5	7.1	21.0	21.0	21.0	10	10	10
50	A	7.6	7.6	7.2	21.0	21.0	21.0	10	10	10
	B	7.6	7.7	7.2	21.0	21.0	21.0	10	10	10
75	A	7.8	7.8	7.2	21.0	21.0	21.0	10	10	10
	B	7.8	7.7	7.2	21.0	21.0	21.0	10	10	10
100	A	8.3	8.1	7.2	20.5	20.5	21.0	10	10	10
	B	8.3	8.1	7.2	20.5	20.5	21.0	10	10	10
Initials		TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP
Date		3/26	3/27	3/28	3/26	3/27	3/28	3/26	3/27	3/28

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	90	90		0.00	0.00	0.00	0.00
100%	520	450		0.00	0.00	0.51	0.53
Initials	TRP	TRP		TRP	TRP	TRP	TRP
Date	3/26	3/27		3/26	3/27	3/26	3/27

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	~~0~~ 24.9	8.1	8.1	24.9	25.1	25.6
12.5	~~0~~ 24.9	8.1	8.1	24.9	25.1	25.4
25	~~0~~ 24.9	8.1	8.2	24.9	25.1	25.3
50	~~0~~ 24.9	8.1	8.2	24.9	25.1	25.4
75	~~0~~ 25.0	8.2	8.3	25.0	25.1	25.6
100	~~0~~ 25.0	8.2	8.3	25.0	25.1	25.8
Initials	TRP	TRP	TRP	TRP	TRP	TRP
Date	3/26	3/27	3/28	3/26	3/27	3/28

Observations: ① 8.1 - TRP 3/26

ACF48PAR.WK3

Project Number: 289-06-01 (001)
Species: M. bahia & Cyprinodon variegatus

Beginning Date & Time: 3-26-20 1705
Ending Date & Time: 3-28-20 1610

Salinity and pH Adjustments

American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	2.2	25.0	8.2	8.1	—	—	TRP	3/26
02	2.2	25.0	8.2	8.1	—	—	TRP	3/27

Observations :

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		2 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	03/26/20	COMPLETION DATE:	03/28/20
INITIATION TIME:	5:05 pm	COMPLETION TIME:	4:40 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — 04/08/20
President, Laboratory Director — Date

MORTALITY DATA	*Mysidopsis bahia*	Test date: 03/26/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 03/11/20

Toxicant: Potassium chloride

48 hour LC_{50}: 707.1 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-01 (001)

Species: M. bahia

Hatch Date: 3-21-20

Dilution Water: ASW

Start Date/Time: 3-26-20 1705

End Date/Time: 3-28-20 1640

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.3	7.3	6.4	21.0	21.0	21.0	10	10	10
	B	7.3	7.3	6.3	21.0	21.0	21.0	10	10	10
12.5	A	7.4	7.3	6.2	21.0	21.0	21.0	10	10	10
	B	7.4	7.3	6.3	21.0	21.0	21.0	10	10	10
25	A	7.5	7.3	6.3	21.0	21.0	21.0	10	10	10
	B	7.5	7.3	6.1	21.0	21.0	21.0	10	10	10
50	A	7.6	7.4	6.3	21.0	21.0	21.0	10	10	10
	B	7.6	7.4	6.3	21.0	21.0	21.0	10	10	10
75	A	7.8	7.6	6.2	21.0	21.0	21.0	10	10	10
	B	7.8	7.6	6.1	21.0	21.0	21.0	10	10	10
100	A	8.3	8.0	5.9	20.5	20.5	21.0	10	10	10
	B	8.3	8.0	6.1	20.5	20.5	21.0	10	10	10
Initials		TMP	TMP	TMP	TMP	TMP	TMP	TMP	TMP	TMP
Date		3/26	3/27	3/28	3/26	3/27	3/28	3/26	3/27	3/28

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sam 1	Sam 2
Control	90	90		0.00	0.00	0.00	0.00
100%	520	450		0.00	0.00	0.51	0.53
Initials	TMP	TMP		TMP	TMP	TMP	TMP
Date	3/26	3/27		3/26	3/27	3/26	3/27

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	①24.9	8.1	~~25.0~~ ②	24.9	25.1	25.7
12.5	①24.9	8.1	~~25~~ ②	24.9	25.1	25.5
25	①24.9	8.1	8.1	24.9	25.1	25.5
50	①24.9	8.1	8.2	24.9	25.1	25.5
75	①25.0	8.2	8.2	25.0	25.1	25.6
100	①25.0	8.2	8.2	25.0	25.2	25.7
Initials	TMP	TMP	TMP	TMP	TMP	TMP
Date	3/26	3/27	3/28	3/26	3/27	3/28

Observations: ①8.1-TMP 3/26 ②7.9 ③8.1 -TMP 3/28

ACF48PAR.WK3

289-06-01(oc1)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — We'll Cross Chemistries

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Roux
Address: 209 Shafter St
Islandia NY 11749
Phone: 908-894-0023
Fax:
Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP
Project Location: 400 Kingsland Ave, Brooklyn NY 11222
Project #: 0172.0030Y060
Project Manager: Courtney Lind
ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials		TOTAL # BOTTLES	Sample Specific Comments
	Outfall 001	03/25/20		E	TG	☒	2	ISTN. 20639
	~~Outfall 002~~	03/25/20		~~E~~	~~TG~~	☒	2	
	Temp @ lab 1.5°C							

Container Type	P	-	-	-	-	-	-	-	-	-	-	-	
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Relinquished By:	Date/Time	Received By:	Date/Time
RS Crawford 3-25-20	3/25/20 1310	RS Crawford 3-25-20	1111
		C Kelly AAT	03/25/20 1310

FORM NO.01-01(I-NJ) (rev. 5-JAN-12)

289-06-01 (001)

CHAIN OF CUSTODY

PAGE 1 OF 1

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

Report Information

☐ FAX ☒ ADEx

Data Deliverables

☒ EMAIL ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program Criteria

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	Sample Specific Comments	TOTAL # BOTTLES
	Outfall 001	03/26/20		E	TG	☒	ISTN	2
	~~Outfall 002~~	~~03/26/20~~		~~E~~	~~TG~~	☒	20641	2
	Temp @ lab 2.5°C					☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	3/26/20	T.P.	1345 3/26

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Outfall 002 WET Testing Results
First Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		07 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	03/26/20	COMPLETION DATE:	03/28/20
INITIATION TIME:	4:30 pm	COMPLETION TIME:	4:30 pm

48 hour LC_{50} /EC_{50} (% effluent):	≥100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — Date 04/08/20
President, Laboratory Director

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 03/26/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 03/26/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1767.8 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-01 (002)

Species: C. variegatus

Hatch Date: 3-19-20

Dilution Water: ASW

Start Date/Time: 3-26-20 1630

End Date/Time: 3-28-20 1630

Test Type: 48hr. SDR

Concentration %	Rep	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.3	~~7.3~~ ②	7.2	21.0	21.0	21.0	10	10	10
	B	7.3	~~7.3~~ ②	7.2	21.0	21.0	21.0	10	10	10
12.5	A	7.4	7.4	7.2	21.0	21.0	21.0	10	10	10
	B	7.4	7.4	7.3	21.0	21.0	21.0	10	10	10
25	A	7.5	7.5	7.2	21.0	21.0	21.0	10	10	10
	B	7.5	7.5	7.2	21.0	21.0	21.0	10	10	10
50	A	7.6	7.9	7.2	21.0	20.5	21.0	10	10	10
	B	7.6	7.8	7.2	21.0	20.5	21.0	10	10	10
75	A	7.8	8.1	7.2	21.0	20.5	21.0	10	10	10
	B	7.8	8.1	7.2	21.0	20.5	21.0	10	10	10
100	A	8.4	8.7	7.3	21.0	20.0	21.0	10	10	10
	B	8.4	8.6	7.3	21.0	20.0	21.0	10	10	10
Initials		TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP
Date		3/26	3/27	3/28	3/26	3/27	3/28	3/26	3/27	3/28

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	90	90		0.00	0.00	0.00	0.00
100%	540	480		0.00	0.00	0.72	0.86
Initials	TRP	TRP		TRP	TRP	TRP	TRP
Date	3/26	3/27		3/26	3/27	3/26	3/27

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	①~~24.9~~	8.1	8.1	24.9	25.1	25.6
12.5	①~~24.9~~	8.1	8.2	24.9	25.1	25.3
25	①24.9	8.1	8.2	24.9	25.1	25.3
50	①24.9	8.2	8.3	24.9	25.1	25.4
75	①~~24.9~~	8.2	8.3	~~25.0~~	25.0	25.4
100	①~~25.0~~	8.3	8.3	~~25.0~~	25.0	25.6
Initials	TRP	TRP	TRP	TRP	TRP	TRP
Date	3/26	3/27	3/28	3/26	3/27	3/28

Observations: ~~①25.0 TRP 3/28~~ ①8.1 - TRP 3/26 ②7.4 - TRP 3/27

ACF48PAR.WK3

289-06-01(002)

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PAGE 1 OF 1

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: EMGPRP
Project Location: 400 Kingsland Ave, Brooklyn NY 11222
Project #: 0172.0030Y060
Project Manager: Courtney Lind
ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date:
Time:

Client Information

Client: Roux
Address: 209 Shafter St
Islandia NY 11749
Phone: 908-894-0023
Fax:
Email: clind@rouxinc.com
☐ These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info
PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program
Criteria

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
	~~Outfall 001~~	~~03/26/20~~		~~E~~	~~TG~~	~~☒~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	~~☐~~	ISW	2
	Outfall 002	03/26/20		E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	20642	2
	Temp@lab 3°c					☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	3/26/20		3/26 1345

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

289-06-01 (002)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program: Criteria

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	Sample Specific Comments	TOTAL # BOTTLES
	Outfall 001	03/25/20		E	TG	☒		2
	Outfall 002	03/25/20		E	TG	☒	IS4W 20640	2
	Temp @ lab 1.0°C							

Container Type	P	-	-	-	-	-	-	-	-	-	-	-	
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible] 3.25.20 1310	3/25/20 1300	[illegible] 3.25.20 1111	
		[illegible]	03/25/20 1310

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		2 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	03/26/20	COMPLETION DATE:	03/28/20
INITIATION TIME:	5:05 pm	COMPLETION TIME:	4:40 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — 04/08/20
President, Laboratory Director — Date

MORTALITY DATA	*Mysidopsis bahia*	Test date: 03/26/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 03/11/20

Toxicant: Potassium chloride

48 hour LC_{50}: 707.1 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

Job #: 289-06-01 (002) **American Aquatic Testing, Inc.**

Species: M. bahia

Hatch Date: 3-21-20

Dilution Water: ASW

Start Date/Time: 3-26-20 1705

End Date/Time: 3-28-20 1640

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.3	7.3	6.4	21.0	21.0	21.0	10	10	10
	B	7.3	7.3	6.3	21.0	21.0	21.0	10	10	10
12.5	A	7.4	7.3	6.4	21.0	21.0	21.0	10	10	10
	B	7.4	7.3	6.5	21.0	21.0	21.0	10	10	10
25	A	7.5	7.3	6.4	21.0	21.0	21.0	10	10	10
	B	7.5	7.4	6.4	21.0	21.0	21.0	10	10	10
50	A	7.6	7.7	6.4	21.0	20.5	21.0	10	10	10
	B	7.6	7.7	6.4	21.0	20.5	21.0	10	10	10
75	A	7.8	7.9	6.3	21.0	20.5	21.0	10	10	10
	B	7.8	7.9	6.3	21.0	20.5	21.0	10	10	10
100	A	8.4	8.4	6.3	21.0	20.0	21.0	10	10	10
	B	8.4	8.4	6.2	21.0	20.0	21.0	10	10	10
Initials		TAP	TAP	TAP	TAP	TAP	TAP	TAP	TAP	TAP
Date		3/26	3/27	3/28	3/26	3/27	3/28	3/26	3/27	3/28

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sam 1	Sam 2
Control	90	90		0.00	0.06	0.00	0.00
100%	540	480		0.00	0.00	0.72	0.86
Initials	TAP	TAP		TAP	TAP	TAP	TAP
Date	3/26	3/27		3/26	3/27	3/26	3/27

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	~~7.90~~	8.1	7.9	24.9	25.1	25.7
12.5	~~7.90~~	8.1	8.1	24.9	25.1	25.3
25	~~7.90~~	8.1	8.2	24.9	25.1	25.4
50	~~7.90~~	8.2	8.2	24.9	25.1	25.4
75	~~7.90~~	8.2	8.3	25.0	25.0	25.5
100	~~7.90~~	8.3	8.3	25.0	25.0	25.5
Initials	TAP	TAP	TAP	TAP	TAP	TAP
Date	3/26	3/27	3/27	3/26	3/27	3/27

Observations: (1) 8.1 - TAP 3/26

ACF48PAR.WK3

Project Number: 289-06-01 (002)
Species: M. bahia & Q. variegatus

Beginning Date & Time: 3-26-20 1705
Ending Date & Time: 3-28-20 1640

Salinity and pH Adjustments
American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	1.5	25.0	8.4	8.1	—	—	TR	3/26
02	1.5	25.0	8.5	8.3	—	—	TR	3/27

Observations :

E&PS

July 28, 2020

New York State Department of Environmental Conservation
Toxicity Testing Unit
Bureau of Watershed Assessment and Management
625 Broadway, Fourth Floor
Albany, New York 12233-7013

Attention: Ms. Nicole Wright

Re: Acute Whole Effluent Toxicity Testing Report – June 2020
SPDES Permit No. NY-0267724
ExxonMobil Greenpoint Petroleum Remediation Project
Greenpoint, Brooklyn, New York

Dear Ms. Wright:

ExxonMobil Oil Corporation is submitting this Acute Whole Effluent Toxicity (WET) Testing Report for the On-Site Free-Product Recovery System (RCS) and the Off-Site Free-Product Recovery System (ORS) for the Second Quarter of 2020, in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) Permit, No. NY-0267724, issued by the NYSDEC, effective April 1, 2015. The SPDES permit (NY 0267724) issued on April 1, 2015 expired on March 31, 2020. A renewal application was submitted to the NYSDEC on September 30, 2019. ExxonMobil received notification from the NYSDEC on October 4, 2019, indicating that the request for renewal was timely and sufficient and is pending review and, until that time, the current permit is to remain in effect, in accordance with the State Administrative Procedures Act. All results indicate no exceedances, as described below.

American Aquatic Testing, Inc., on behalf of Alpha Analytical, performed two static-renewal acute toxicity tests for the Outfalls 001 and 002 by exposing mysid (i.e., *Mysidopsis bahia*) and sheepshead minnow (i.e., *Cyprinodon variegatus*) to the samples for forty-eight hours in a static-renewal test system. All results indicate no exceedances of the respective SPDES Permit action levels, as shown in the laboratory analytical results attached hereto.

The Outfall 001 discharge was sampled on June 16, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 307 gpm, or 0.44 MGD. The Outfall 001 discharge was sampled again on June 17, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 380 gpm, or 0.54 MGD. The Outfall 001 discharge sample results indicate no exceedances of toxicity action levels specified in the SPDES Permit for Outfall 001. As shown in the attached laboratory analytical results and below table, there was no statistically-significant toxicity in 100% effluent compared to the control, so the toxicity unit-acute (TUa) was determined to be 0.3 for both the opossum shrimp and the sheepshead minnow test, in accordance with the WET Testing evaluation procedure described in the attached laboratory results.

The Outfall 002 discharge was sampled on June 9, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 364 gpm, or 0.52 MGD. The Outfall 002 discharge

was sampled again on June 10, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 309 gpm, or 0.44 MGD. The Outfall 002 discharge sample results indicate no exceedances of toxicity action levels specified in the SPDES Permit for Outfall 002. As shown in the attached laboratory analytical results and below table, there was 95% survival in 100% effluent compared to the control, so the TUa was determined to be <1.0 for both the opossum shrimp and the sheepshead minnow tests, in accordance with the WET Testing evaluation procedure described in the SPDES Permit.

Should there be any questions or comments on this submission, please do not hesitate to contact me at (718) 404-0652.

Discharge Location	Species	Analysis Type	Action Level (TUa)	48-Hr LC_{50} (% Effluent)	Survival in 100% Effluent (%)	Calculated TUa[1]	In Compliance
Outfall 001	Opossum Shrimp	Invertebrate	1.8	>100	100	0.3[2]	Yes
	Sheepshead Minnow	Vertebrate	1.8	>100	100	0.3[2]	Yes
Outfall 002	Opossum Shrimp	Invertebrate	1.8	>100	95	<1.0	Yes
	Sheepshead Minnow	Vertebrate	1.8	>100	95	<1.0	Yes

1. TUa = (100)/(48 hr LC50) or (100)/(48 hr EC50)

2. TUa is reported as 0.3 if there is no statistically significant toxicity in 100% effluent as compared to control, as per SPDES permit.

Sincerely,

Frank Messina
Project Manager

Attachments

cc: Randy Whitcher, NYSDEC, Division of Environmental Remediation – Albany, NY
Regional Water Engineer (NYSDEC Region 2) – Long Island City, NY
04/Brooklyn Public Library, Brooklyn Collection – Brooklyn, NY
Justin Kennedy, P.E., Roux Environmental Engineering and Geology, D.P.C.

Outfall 001 WET Testing Results
Second Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		11 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	06/17/20	COMPLETION DATE:	06/19/20
INITIATION TIME:	12:30 pm	COMPLETION TIME:	11:30 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally
President, Laboratory Director

07/2/20
Date

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 06/17/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	9	9
	B	10	9	9
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 06/10/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1707.6 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-02(001)

Species: C. variegatus

Hatch Date: 6-6-20

Dilution Water: ASW

Start Date/Time: 6-17-20 1230

End Date/Time: 6/19/20 1130

Test Type: 48hr. SDR

Concentration %	Rep	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.2	6.7	20.5	21.0	21.0	10	10	10
	B	7.4	7.2	6.6	20.5	21.0	21.0	10	10	10
12.5	A	7.4	7.3	6.6	20.5	21.0	21.0	10	10	10
	B	7.4	7.3	6.6	20.5	21.0	21.0	10	10	10
25	A	7.5	7.3	6.6	20.5	21.0	21.0	10	10	10
	B	7.5	7.3	6.5	20.5	21.0	21.0	10	10	10
50	A	7.7	7.3	6.5	20.5	21.0	21.0	10	9	9
	B	7.7	7.3	6.6	20.5	21.0	21.0	10	9	9
75	A	8.1	7.5	6.6	20.5	21.0	21.0	10	10	10
	B	8.1	7.5	6.5	20.5	21.0	21.0	10	10	10
100	A	8.6	7.7	6.6	20.0	21.0	21.0	10	10	10
	B	8.6	7.7	6.6	20.0	21.0	21.0	10	10	10
Initials		TRP	MTF	KB	TRP	MTF	KB	TRP	MTF	KB
Date		6/17	6-18	6/19	6/17	6-18	6/19	6/17	6-18	6/19

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	150	150		0.00	0.00	0.02	0.00
100%	470	500		0.00	0.00	0.32	0.41
Initials	MTF	MTF		MTF	MTF	MTF	MTF
Date	6-17	6-18		6-17	6-18	6-17	6-18

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	7.9	8.1	7.7	25.1	25.2	25.3
12.5	8.0	8.2	7.9	25.0	25.2	25.1
25	8.1	8.2	7.9	25.0	25.2	25.1
50	8.1	8.2	8.0	25.0	25.2	25.0
75	8.2	8.2	8.1	24.9	25.1	25.0
100	8.2	8.3	8.1	24.9	25.0	25.0
Initials	TRP	MTF	KB	TRP	MTF	KB
Date	6/17	6-18	6/19	6/17	6-18	6/19

Observations:

ACF48PAR.WK3

289-06-02(001)

CHAIN OF COUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry

Westborough, MA	**Mansfield, MA**
TEL: 508-898-9220	TEL: 508-822-9300
FAX: 508-898-9193	FAX: 508-822-3288

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info

PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program

Criteria

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
	Outfall 001	6/16/20	10:12	E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Temp @ lab 4.0°C	2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
	ISTH 201098					☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	P	-	-	-	-	-	-	-	-	-	-	-		
					Preservative	A	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	6/16/20 1315	(AAL)	6/16/2020 1315
(AAL)	6/16/2020 1640		6/17/20 9:00
	6/17/20 1040		6/17/20 1040

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Report Information — Data Deliverables

- ☐ FAX
- ☒ EMAIL
- ☒ ADEx
- ☐ Add'l Deliverables

Billing Information

- ☒ Same as Client info
- PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration
- ☐ Done
- ☐ Not Needed
- ☐ Lab to do

Preservation
- ☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	Sample Specific Comments	TOTAL # BOTTLES
	Outfall 001	6/17/20	8:45AM	E	~~SS~~ NK	☒	IST N 20114	2
						☐		2
						☐		2
						☐		2
	Temp @ lab 0.2°C					☐		
						☐		
						☐		
						☐		
						☐		
						☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature] (AAL)	6-17-2020 12:00	[signature] (AAL)	6/17/2020 12:00
[signature] AAL	6/17/2020 1755	[signature] AAL	6/18/20 08:00
[signature] AAL	6/18/20 1130	T. Collins	6/18/20 1130

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		4 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	06/17/20	COMPLETION DATE:	06/19/20
INITIATION TIME:	12:30 pm	COMPLETION TIME:	11:30 am

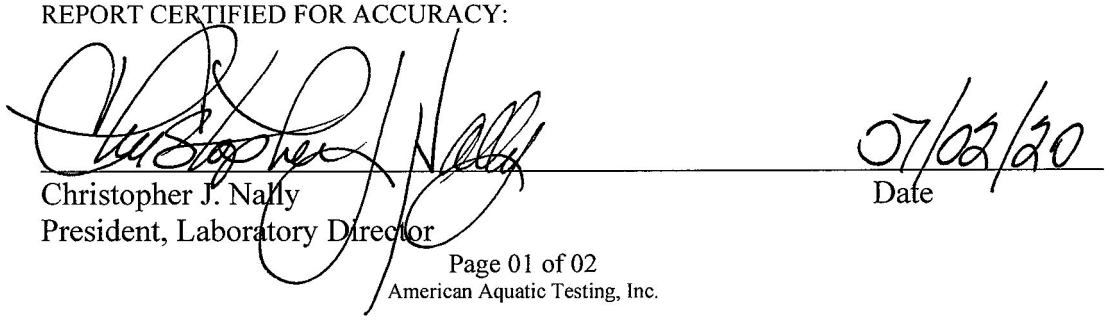
48 hour LC_{50} /EC_{50} (% effluent):	≥100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:



07/02/20

Christopher J. Nally — Date
President, Laboratory Director

MORTALITY DATA	*Mysidopsis bahia*	Test date: 06/17/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	09
25.0	A	10	09	09
	B	10	09	09
50.0	A	10	09	09
	B	10	10	10
75.0	A	10	09	09
	B	10	09	08
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 6/29/20

Toxicant: Potassium chloride

48 hour LC_{50}: 637.3 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-02(001)

Species: M. bahia

Hatch Date: 6-13-20

Dilution Water: ASW

Start Date/Time: 6-17-20 1230

End Date/Time: 6/19/20 1130

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.4	7.0	20.5	21.0	21.0	10	10	10
	B	7.4	7.4	7.0	20.5	21.0	21.0	10	10	10
12.5	A	7.4	7.4	6.9	20.5	21.0	21.0	10	10	~~9~~ +(2)
	B	7.4	7.4	7.0	20.5	21.0	21.0	10	10	9
25	A	7.5	7.4	7.0	20.5	21.0	21.0	10	9	9
	B	7.5	7.4	7.0	20.5	21.0	21.0	10	9	9
50	A	7.7	7.5	7.0	20.5	21.0	21.0	10	9	9
	B	7.7	7.5	7.0	20.5	21.0	21.0	10	10	10
75	A	8.1	7.5	7.0	20.5	21.0	21.0	10	9	9
	B	8.1	7.6	6.9	20.5	21.0	21.0	10	9	8
100	A	8.6	7.8	7.0	20.0	21.0	21.0	10	10	10
	B	8.6	7.9	7.0	20.0	21.0	21.0	10	10	10
Initials		TAP	MJF	KB	TAP	MJF	KB	TAP	MJF	KB
Date		6/17	6-18	6/19	6/17	6-18	6/19	6/17	6-18	6/19

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sam 1	Sam 2
Control	150	150		0.00	0.00	~~0.00~~ 0.00	0.00
100%	470	500		0.00	0.00	0.32	0.41
Initials	MJF	MJF		MJF	MJF	MJF	MJF
Date	6-17	6-18		6-17	6-18	6-17	6-18

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	7.9	8.0	7.6	25.1	25.2	25.2
12.5	8.0	8.1	7.9	25.0	25.3	25.0
25	8.1	8.1	7.9	25.0	25.2	25.0
50	8.1	8.2	8.0	25.0	25.2	25.0
75	8.2	8.2	8.1	24.9	25.1	24.9
100	8.2	8.2	8.1	24.9	25.1	24.8
Initials	TAP	MJF	KB	TAP	MJF	KB
Date	6/17	6-18	6/19	6/17	6-18	6/19

0.00
MJF 6-17 20

Observations (2) 10 - KB 6/19

ACP48PAR.WK3

Project Number: 289-06-02 (001)
Species: M. bahia & C. variegatus

Beginning Date & Time: 6-17-20 1230
Ending Date & Time: 6/19/20 1130

Salinity and pH Adjustments
American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	2.1	25.0	8.3	8.1	—	—	MF	6-17
02	3.2	25.0	8.2	8.3	—	—	MF	6-4

Observations :

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
R.I. • Cape Cod • Connecticut

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	TOTAL # BOTTLES	Sample Specific Comments
	Outfall 001	6/16/20	10:2	E	TG	☒	2	
						☐	2	
						☐	2	
						☐	2	
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By	Date/Time	Received By:	Date/Time
T. [signature]	6/16/20	BISMARPOUGS (AAL)	6/17/2020 1345

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Roux
Address: 209 Shafter St
Islandia NY 11749
Phone: 908-894-0023
Fax:
Email: clind@rouxinc.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP
Project Location: 400 Kingsland Ave, Brooklyn NY 11222
Project #: 0172.0030Y060
Project Manager: Courtney Lind
ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info
PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program
Criteria

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
	Outfall 001	6/17/20	8:45AM	E	NK	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	6-17-2020 12:00	(AAL)	6/17/2020 12:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I)
(rev. 5-JAN-12)

Outfall 002 WET Testing Results
Second Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		04 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	06/10/20	COMPLETION DATE:	06/12/20
INITIATION TIME:	5:00 pm	COMPLETION TIME:	5:00 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	95%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — 07/02/20

Christopher J. Nally
President, Laboratory Director

Date

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 06/10/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	9	9
	B	10	10	10
100.0	A	10	10	9
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 06/10/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1707.6 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-02(002)
Species: C. variegatus
Hatch Date: 6-6-20
Dilution Water: ASW

Start Date/Time: 6-10-20 1700
End Date/Time: 6-12-20 1715
Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.2	7.2	21.5	21.0	20.5	10	10	10
	B	7.4	7.2	7.2	21.5	21.0	20.5	10	10	10
12.5	A	7.4	7.2	7.1	21.5	21.0	20.5	10	10	10
	B	7.4	7.3	7.2	21.5	21.0	20.5	10	10	10
25	A	7.5	7.3	7.2	21.5	21.0	20.5	10	10	10
	B	7.5	7.3	7.2	21.5	21.0	20.5	10	10	10
50	A	7.8	7.5	7.2	21.0	21.0	20.5	10	10	10
	B	7.8	7.5	7.2	21.0	21.0	20.5	10	10	10
75	A	7.9	7.7	7.3	21.0	21.0	20.5	10	9	9
	B	7.9	7.6	7.2	21.0	21.0	20.5	10	10	10
100	A	8.7	8.0	7.3	20.5	21.0	20.5	10	10	9
	B	8.7	8.0	7.3	20.5	21.0	20.5	10	10	10
Initials		KB	KB	JID	KB	KB	JID	KB	KB	JID
Date		6/10	6/11	6/12	6/10	6/11	6/12	6/10	6/11	6/12

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sam 1	Sam 2
Control	150	150		0.00	0.00	0.00	0.00
100%	490	450		0.00	0.00	0.56	0.54
Initials	KB	KB		KB	KB	MF	MF
Date	6/10	6/11		6/10	6/11	6-11	6-11

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.5	8.3	8.2	24.4	25.1	25.1
12.5	8.4	8.3	8.2	24.4	25.1	25.1
25	8.3	8.3	8.3	24.5	25.1	25.1
50	8.3	8.2	8.3	24.6	25.1	25.0
75	8.3	8.2	8.3	24.7	25.1	25.0
100	8.2	8.2	8.3	24.8	25.1	25.0
Initials	KB	KB	JID	KB	KB	JID
Date	6/10	6/11	6/12	6/10	6/11	6/12

Observations:

289-06-02 (002)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Date Rec'd in Lab:

ALPHA Job #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info

PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program

Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
	Outfall 002	6/9/20	1045	E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
	Temp@Lab					☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
	0.5°C					☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	6-9-20 12:25	AAL	6-9-20 12:25
	6-9-20 16:10	AAL	6/10/20 5:52
AAL	6/10/20 10:12	AAT	6/10/20 1012

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev 5-JAN-12)

CHAIN OF CUSTODY

PAGE 1 OF 1

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Report Information — Data Deliverables

- ☐ FAX
- ☒ EMAIL
- ☒ ADEx
- ☐ Add'l Deliverables

Billing Information

- ☒ Same as Client info
- PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program	Criteria

Project Information

- Project Name: EMGPRP
- Project Location: 400 Kingsland Ave, Brooklyn NY 11222
- Project #: 0172.0030Y060
- Project Manager: Courtney Lind
- ALPHA Quote #: 10194

Client Information

- Client: Roux
- Address: 209 Shafter St
- Islandia NY 11749
- Phone: 908-894-0023
- Fax:
- Email: clind@rouxinc.com
- ☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

- ☒ Standard
- ☐ Rush (ONLY IF PRE-APPROVED)
- Due Date:
- Time:

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration
- ☐ Done
- ☐ Not Needed
- ☐ Lab to do

Preservation
- ☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	TOTAL # BOTTLES
	Outfall 002	6/10/20	1100	E	TG	☒	2
						☐	2
	TEMP @ LAB 2.5°C					☐	2
	ISTN 201063					☐	2
						☐	
						☐	
						☐	
						☐	
						☐	
						☐	

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	6/10/20 11:0		6/11/20 1200
	6-10-20 1755	Mark Reale	6-11-20 06:00
Mark Reale	6/11/20 9:00	AAT	06/11/20 0900

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Steve P. Trifiletti
Phone Number:	(718) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		3 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	06/10/20	COMPLETION DATE:	06/12/20
INITIATION TIME:	5:20 pm	COMPLETION TIME:	5:20 pm

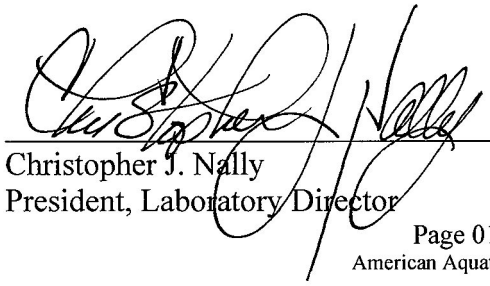
48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	95%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:



07/02/20

Christopher J. Nally
President, Laboratory Director

Date

MORTALITY DATA	*Mysidopsis bahia*	Test date: 06/10/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	9	9
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	9
100.0	A	10	10	9
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 6/29/20

Toxicant: Potassium chloride

48 hour LC_{50}: 637.3 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-02 (002)

Species: ~~C. variegatus~~ M. bahia

Hatch Date: 6-7-26

Dilution Water: ASW

Start Date/Time: 6-10-26 1720

End Date/Time: 6-12-26 1720

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.3	7.1	21.5	21.0	20.5	10	10	10
	B	7.4	7.3	7.2	21.5	21.0	20.5	10	10	10
12.5	A	7.4	7.3	7.2	21.5	21.0	20.5	10	9	9
	B	7.4	7.3	7.1	21.5	21.0	20.5	10	10	10
25	A	7.5	7.3	7.2	21.5	21.0	20.5	10	10	10
	B	7.5	7.4	7.1	21.5	21.0	20.5	10	10	10
50	A	7.8	7.4	7.2	21.0	21.0	20.5	10	10	10
	B	7.8	7.5	7.1	21.0	21.0	20.5	10	10	10
75	A	7.9	7.5	7.1	21.6	21.0	20.5	10	10	10
	B	7.9	7.6	7.1	21.0	21.0	20.5	10	10	9
100	A	8.7	7.7	7.3	20.5	21.0	20.5	10	10	9
	B	8.7	8.1	7.2	20.5	21.0	20.5	10	10	10
Initials		KB	KB	JHO	KB	KB	JHO	KB	KB	JHO
Date		6/10	6/11	6/12	6/10	6/11	6/12	6/10	6/11	6/12

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	150	150		0.00	0.00	0.00	0.00
100%	490	450		0.00	0.00	0.56	0.54
Initials	KB	KB		KB	KB	MF	MF
Date	6/10	6/11		6/10	6/11	6-11	6-11

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.5	8.3	8.2	24.4	25.1	25.0
12.5	8.4	8.3	8.2	24.4	25.1	25.1
25	8.3	8.3	8.3	24.5	25.1	25.1
50	8.3	8.2	8.3	24.6	25.1	25.0
75	8.3	8.2	8.3	24.7	25.1	25.0
100	8.2	8.2	8.3	24.8	25.0	25.0
Initials	KB	KB	JHO	KB	KB	JHO
Date	6/10	6/11	6/12	6/10	6/11	6/12

Observations:

Project Number: 289-06-02 (002)
Species: M. bahia ; C. variegatus

Beginning Date & Time: 6-10-20 1720
Ending Date & Time: 6-17-20 1720

Salinity and pH Adjustments
American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	1.5	25.0	8.2	8.3	—	—	MM	6-10-20
02	1.5	25.0	8.2	8.2	—	—	TP	6/11/20

Observations :

CHAIN OF CUSTODY

PAGE 1 OF 1

Alpha Analytical

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info

PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program

Criteria

ANALYSIS

SAMPLE HANDLING

Filtration

- ☐ Done
- ☐ Not Needed
- ☐ Lab to do

Preservation

- ☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
	Outfall 002	6/9/20		E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	P	-	-	-	-	-	-	-	-	-	-	-		
					Preservative	A	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
1.	6-9-20 12:25	[illegible] AAL	6-9-20 12:25

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO [illegible]
[illegible]

Scanned by CamScanner

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Roux
Address: 209 Shafter St
Islandia NY 11749
Phone: 908-894-0023
Fax:
Email: clind@rouxinc.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP
Project Location: 400 Kingsland Ave, Brooklyn NY 11222
Project #: 0172.0030Y060
Project Manager: Courtney Lind
ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info
PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program

Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
	Outfall 002	6/10/20		E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	6/10/20 11:05	AAL	6-10-20 1200

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

E&PS

October 27, 2020

New York State Department of Environmental Conservation
Toxicity Testing Unit
Bureau of Watershed Assessment and Management
625 Broadway, Fourth Floor
Albany, New York 12233-7013

Attention: Ms. Nicole Wright

Re: Acute Whole Effluent Toxicity Testing Report – September 2020
SPDES Permit No. NY-0267724
ExxonMobil Greenpoint Petroleum Remediation Project
Greenpoint, Brooklyn, New York

Dear Ms. Wright:

ExxonMobil Oil Corporation is submitting this Acute Whole Effluent Toxicity (WET) Testing Report for the On-Site Free-Product Recovery System (RCS) and the Off-Site Free-Product Recovery System (ORS) for the Third Quarter of 2020, in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) Permit, No. NY-0267724, issued by the NYSDEC, effective April 1, 2015. The SPDES permit (NY 0267724) issued on April 1, 2015 expired on March 31, 2020. A renewal application was submitted to the NYSDEC on September 30, 2019. ExxonMobil received notification from the NYSDEC on October 4, 2019, indicating that the request for renewal was timely and sufficient and is pending review and, until that time, the current permit is to remain in effect, in accordance with the State Administrative Procedures Act. All results indicate no exceedances, as described below.

American Aquatic Testing, Inc., on behalf of Alpha Analytical, performed two static-renewal acute toxicity tests for the Outfalls 001 and 002 by exposing mysid (i.e., *Mysidopsis bahia*) and sheepshead minnow (i.e., *Cyprinodon variegatus*) to the samples for forty-eight hours in a static-renewal test system. All results indicate no exceedances of the respective SPDES Permit action levels, as shown in the laboratory analytical results attached hereto.

The Outfall 001 discharge was sampled on September 15, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 306 gpm, or 0.44 MGD. The Outfall 001 discharge was sampled again on September 16, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 388 gpm, or 0.56 MGD. The Outfall 001 discharge sample results indicate no exceedances of toxicity action levels specified in the SPDES Permit for Outfall 001. As shown in the attached laboratory analytical results and below table, there was no statistically-significant toxicity in 100% effluent compared to the control, so the toxicity unit-acute (TUa) was determined to be 0.3 for both the opossum shrimp and the sheepshead minnow test, in accordance with the WET Testing evaluation procedure described in the attached laboratory results.

The Outfall 002 discharge was sampled on September 15, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 340 gpm, or 0.49 MGD. The Outfall 002 discharge was sampled again on September 16, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 291 gpm, or 0.42 MGD. The Outfall 002 discharge sample results indicate no exceedances of toxicity action levels specified in the SPDES Permit for Outfall 002. As shown in the attached laboratory analytical results and below table, there was no statistically-significant toxicity in 100% effluent compared to the control, so the TUa was determined to be 0.3 for both the opossum shrimp and the sheepshead minnow tests, in accordance with the WET Testing evaluation procedure described in the SPDES Permit.

Should there be any questions or comments on this submission, please do not hesitate to contact me at 718-404-0652.

Discharge Location	Species	Analysis Type	Action Level (TUa)	48-Hr LC_{50} (% Effluent)	Survival in 100% Effluent (%)	Calculated TUa[1]	In Compliance
Outfall 001	Opossum Shrimp	Invertebrate	1.8	>100	100	0.3[2]	Yes
	Sheepshead Minnow	Vertebrate	1.8	>100	100	0.3[2]	Yes
Outfall 002	Opossum Shrimp	Invertebrate	1.8	>100	100	0.3[2]	Yes
	Sheepshead Minnow	Vertebrate	1.8	>100	100	0.3[2]	Yes

1. TUa = (100)/(48 hr LC50) or (100)/(48 hr EC50)

2. TUa is reported as 0.3 if there is no statistically significant toxicity in 100% effluent as compared to control, as per SPDES permit.

Sincerely,

Frank Messina
Project Manager

Attachments

cc: Randy Whitcher, NYSDEC, Division of Environmental Remediation – Albany, NY
Regional Water Engineer (NYSDEC Region 2) – Long Island City, NY
04/Brooklyn Public Library, Brooklyn Collection – Brooklyn, NY
Justin Kennedy, P.E., Roux Environmental Engineering and Geology, D.P.C.

Outfall 001 WET Testing Results
Third Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		13 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	09/16/20	COMPLETION DATE:	09/18/20
INITIATION TIME:	6:20 pm	COMPLETION TIME:	5:20 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — 10/20/20
President, Laboratory Director — Date

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 09/16/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 09/09/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1767.8 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-03 (001)

Species: C. variegatus

Hatch Date: 9-3-20

Dilution Water: ASW

Start Date/Time: 9-16-20 1820

End Date/Time: 9/18/20 1720

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen(mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.3	6.8	21.0	21.0	20.0	10	10	10
	B	7.4	7.3	6.9	21.0	21.0	20.0	10	10	10
12.5	A	7.3	7.3	6.9	21.0	21.0	20.0	10	10	10
	B	7.3	7.3	7.0	21.0	21.0	20.0	10	10	10
25	A	7.4	7.3	6.9	21.0	21.0	20.0	10	10	10
	B	7.4	7.3	6.9	21.0	21.0	20.0	10	10	10
50	A	8.0	7.4	7.0	21.0	21.0	20.0	10	10	10
	B	8.0	7.4	6.9	21.0	21.0	20.0	10	10	10
75	A	8.2	7.5	6.9	20.5	21.0	20.0	10	10	10
	B	8.2	7.6	6.8	20.5	21.0	20.0	10	10	10
100	A	9.2	7.7	6.8	20.0	21.0	20.0	10	10	10
	B	9.2	7.8	6.8	20.0	21.0	20.0	10	10	10
Initials		JC	KB	JC	JC	KB	JC	JC	JC	JC
Date		9/16	9/17	9/18	9/16	9/17	9/18	9/16	9/17	9/18

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	130	130		0.00	0.00	0.00	0.00
100%	520	500		0.01	0.02	0.23	0.13
Initials	KB	MH		KB	MH	MH	MH
Date	9/16	9-17		9/16	9-17	9-16	9-17

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.2	8.2	8.2	25.3	25.6	25.7
12.5	8.2	8.2	8.2	25.4	25.5	25.6
25	8.2	8.2	8.2	25.3	25.4	25.5
50	8.1	8.2	8.2	25.2	25.4	25.5
75	8.1	8.1	8.2	25.1	25.3	25.5
100	8.1	8.1	8.2	25.0	25.3	25.5
Initials	JC	KB	JC	JC	KB	JC
Date	9/16	9/17	9/18	9/16	9/17	9/18

Observations:

289-06-03

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Roux
Address: 209 Shafter St
Islandia NY 11749
Phone: 908-894-0023
Fax:
Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP
Project Location: 400 Kingsland Ave, Brooklyn NY 11222
Project #: 0172.0030Y060
Project Manager: Courtney Lind
ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

Report Information

☐ FAX
☒ ADEx

Data Deliverables

☒ EMAIL
☐ Add'l Deliverables

Billing Information

☒ Same as Client info
PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	Sample Specific Comments	TOTAL # BOTTLES
Temp 1.0°C	Outfall 001	9/15/20	12:47	E	TG	☒	201783	2
Temp 0.5°C	Outfall 002	9/15/20	10:47	E	TG	☒	201784	2
						☐		2
						☐		2
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-	
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9/15/20 1300		
	9/15/20 1940		9/15/20 1200
	9-16-20 1050		9/16/20 1052

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

289-06-03

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	Sample Specific Comments	TOTAL # BOTTLES
Temp 0.5°C	Outfall 001	9/16/20	12:05	E	TG	☒	ISTN 201804	2
Temp 0.5°C	Outfall 002	9/16/20	10:45	E	TG	☒	ISTN 201805	2
						☐		2
						☐		2
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
Natasha B.	9/16/20 1300	ALPHA COURIER (AAL)	9/16/2020
ALPHA COURIER (AAL)	9/16/2020 1900	T. Pollyp	9/17/20 09:30
R. Crawford	9-17-20 9:30		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#: NY 0267724
Facility Name: ExxonMobil Oil Corporation
Greenpoint Remediation Project
Reporting Location: 400 Kingsland Avenue
Brooklyn, NY 11222

Contact Person: Frank Messina
Phone Number: (716) 404-0652
Laboratory: American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		2 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	09/16/20	COMPLETION DATE:	06/18/20
INITIATION TIME:	6:20 pm	COMPLETION TIME:	5:20 pm

48 hour LC_{50} /EC_{50} (% effluent): >100%
Survival in 100 % effluent: 100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally
President, Laboratory Director

10/06/20
Date

MORTALITY DATA	*Mysidopsis bahia*	Test date: 09/16/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 8/31/20

Toxicant: Potassium chloride

48 hour LC_{50}: 683.0 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-03(001)
Species: M. bahia
Hatch Date: 9-14-20
Dilution Water: ASW

Start Date/Time: 9-16-20 1820
End Date/Time: 9/18/20 1720
Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.3	6.9	21.0	21.0	20.0	10	10	10
	B	7.4	7.3	6.9	21.0	21.0	20.0	10	10	10
12.5	A	7.3	7.3	6.9	21.0	21.0	20.0	10	10	10
	B	7.3	7.3	6.9	21.0	21.0	20.0	10	10	10
25	A	7.4	7.4	6.9	21.0	21.0	20.0	10	10	10
	B	7.4	7.4	6.9	21.0	21.0	20.0	10	10	10
50	A	8.0	7.5	6.9	21.0	21.0	20.0	10	10	10
	B	8.0	7.5	6.9	21.0	21.0	20.0	10	10	10
75	A	8.2	7.5	6.9	20.5	20.5	20.0	10	10	10
	B	8.2	7.6	6.9	20.5	20.5	20.0	10	10	10
100	A	9.2	7.7	6.9	20.0	20.5	20.0	10	10	10
	B	9.2	7.9	6.9	20.0	20.5	20.6	10	10	10
Initials		JC	KB	JC	JC	KB	JC	JC	JC	JC
Date		9/16	9/17	9/18	9/16	9/17	9/18	9/16	9/17	9/18

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sam 1	Sam 2
Control	130	130		0.00	0.00	0.00	0.00
100%	520	500		0.01	0.02	0.23	0.13
Initials	KB	MF		KB	MF	MF	MF
Date	9/16	9-17		9/16	9-17	9-16	9-17

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.2	8.2	8.2	25.3	25.5	25.7
12.5	8.2	8.2	8.2	25.4	25.4	25.6
25	8.2	8.2	8.2	25.3	25.4	25.5
50	8.1	8.1	8.1	25.2	25.4	25.5
75	8.1	8.1	8.1	25.1	25.3	25.5
100	8.1	8.1	8.1	25.0	25.3	25.5
Initials	JC	KB	JC	JC	KB	JC
Date	9/16	9/17	9/18	9/16	9/17	9/18

Observations:

Project Number: 289-06-03(001)
Species: M. bahia & O. variegatus

Beginning Date & Time: 9-16-20 1820
Ending Date & Time: 9/18/20 1720

Salinity and pH Adjustments
American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	2.0	25.0	8.2	8.1	—	—	KB	9/16
02	1.9	25.1	8.4	8.1	—	—	MF	9-17

Observations :

Outfall 002 WET Testing Results
Third Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		13 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	09/16/20	COMPLETION DATE:	09/18/20
INITIATION TIME:	6:20 pm	COMPLETION TIME:	5:20 pm

48 hour LC_{50} /EC_{50} (% effluent):	≥100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — 10/06/20
President, Laboratory Director — Date

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 09/16/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 09/09/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1767.8 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-03 (002)

Species: C. variegatus

Hatch Date: 9-3-20

Dilution Water: ASW

Start Date/Time: 9-16-20 1820

End Date/Time: 9/18/20 1720

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen(mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.4	6.9	21.0	21.0	20.0	10	10	10
	B	7.4	7.3	6.9	21.0	21.0	20.0	10	10	10
12.5	A	7.5	7.3	6.8	20.5	21.0	20.0	10	10	10
	B	7.5	7.3	6.8	20.5	21.0	20.0	10	10	10
25	A	7.5	7.3	6.9	20.5	21.0	20.0	10	10	10
	B	7.5	7.4	6.9	20.5	21.0	20.0	10	10	10
50	A	7.7	7.4	6.9	20.5	21.0	20.0	10	10	10
	B	7.7	7.5	6.9	20.5	21.0	20.0	10	10	10
75	A	8.0	7.6	6.8	20.0	21.0	20.0	10	10	10
	B	8.0	7.6	6.9	20.0	21.0	20.0	10	10	10
100	A	8.6	7.6	6.9	20.0	21.0	20.0	10	10	10
	B	8.6	7.8	6.8	20.0	21.0	20.0	10	10	10
Initials		JC	KB	JC	JC	KB	JC	JC	JC	JC
Date		9/16	9/17	9/18	9/16	9/17	9/18	9/16	9/17	9/18

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	130	130		0.00	0.00	0.00	0.00
100%	640	540		0.00	0.03	0.49	0.45
Initials	KB	KB		KB	KB	MF	MF
Date	9/16	9/17		9/16	9/17	9-16	9-17

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.2	8.2	8.2	25.3	25.5	25.7
12.5	8.3	8.2	8.2	25.3	25.4	25.6
25	8.2	8.2	8.2	25.2	25.3	25.6
50	8.2	8.2	8.2	25.2	25.2	25.5
75	8.1	8.1	8.2	25.2	25.2	25.5
100	8.1	8.1	8.2	25.1	25.1	25.4
Initials	JC	KB	JC	JC	KB	JC
Date	9/16	9/17	9/18	9/16	9/17	9/18

Observations:

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		2 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	09/16/20	COMPLETION DATE:	09/18/20
INITIATION TIME:	6:20 pm	COMPLETION TIME:	5:20 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally — 10/26/20
President, Laboratory Director — Date

MORTALITY DATA	*Mysidopsis bahia*	Test date: 09/16/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 8/31/20

Toxicant: Potassium chloride

48 hour LC_{50}: 683.0 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-03(002)
Species: M. bahia
Hatch Date: 9-14-20
Dilution Water: ASW

Start Date/Time: 9-16-20 1820
End Date/Time: 9/18/20 1720
Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.4	6.9	21.0	21.0	20.0	10	10	10
	B	7.4	7.4	6.9	21.0	21.0	20.0	10	10	10
12.5	A	7.5	7.3	6.8	20.5	21.0	20.0	10	10	10
	B	7.5	7.3	6.9	20.5	21.0	20.0	10	10	10
25	A	7.5	7.3	6.9	20.5	21.0	20.0	10	10	10
	B	7.5	7.3	6.9	20.5	21.0	20.0	10	10	10
50	A	7.7	7.4	7.0	20.5	21.0	20.0	10	10	10
	B	7.7	7.4	7.0	20.5	21.0	20.0	10	10	10
75	A	8.0	7.6	7.0	20.0	20.5	20.0	10	10	10
	B	8.0	7.7	6.9	20.0	20.5	20.0	10	10	10
100	A	8.6	7.7	7.0	20.0	20.5	20.0	10	10	10
	B	8.6	7.9	6.8	20.0	20.5	20.0	10	10	10
Initials		JC	KB	JC	JC	KB	JC	JC	JC	JC
Date		9/16	9/17	9/18	9/16	9/17	9/18	9/16	9/17	9/18

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sam 1	Sam 2
Control	130	130		0.00	0.00	0.00	0.00
100%	640	540		0.00	0.02	0.89	0.45
Initials	KB	KB		KB	KB	MF	MF
Date	9/16	9/17		9/16	9/17	9-16	9-17

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.2	8.2	8.2	25.3	25.5	25.7
12.5	8.3	8.2	8.2	25.3	25.4	25.6
25	8.2	8.2	8.2	25.2	25.3	25.5
50	8.2	8.2	8.2	25.2	25.3	25.5
75	8.1	8.1	8.2	25.2	25.2	25.4
100	8.1	8.1	8.2	25.1	25.2	25.4
Initials	JC	KB	JC	JC	KB	JC
Date	9/16	9/17	9/18	9/16	9/17	9/18

Observations:

Project Number: 289-06-03(002)
Species: M. bahia & Q. variegatus

Beginning Date & Time: 9-16-20 1820
Ending Date & Time: 9/18/20 1720

Salinity and pH Adjustments
American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	1.4	25.6	8.5	8.1	—	—	KB	9/16
02	1.5	25.1	8.4	8.1	—	—	MF	9/17

Observations :

E&PS

December 28, 2020

New York State Department of Environmental Conservation
Toxicity Testing Unit
Bureau of Watershed Assessment and Management
625 Broadway, Fourth Floor
Albany, New York 12233-7013

Attention: Ms. Nicole Wright

Re: Acute Whole Effluent Toxicity Testing Report – November 2020
SPDES Permit No. NY-0267724
ExxonMobil Greenpoint Petroleum Remediation Project
Greenpoint, Brooklyn, New York

Dear Ms. Wright:

ExxonMobil Oil Corporation is submitting this Acute Whole Effluent Toxicity (WET) Testing Report for the On-Site Free-Product Recovery System (RCS) and the Off-Site Free-Product Recovery System (ORS) for the Fourth Quarter of 2020, in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) Permit, No. NY-0267724, issued by the NYSDEC, effective April 1, 2015. The SPDES permit (NY 0267724) issued on April 1, 2015 expired on March 31, 2020. A renewal application was submitted to the NYSDEC on September 30, 2019. ExxonMobil received notification from the NYSDEC on October 4, 2019, indicating that the request for renewal was timely and sufficient and is pending review and, until that time, the permit issued April 1, 2015 is to remain in effect, in accordance with the State Administrative Procedures Act. All results indicate no exceedances, as described below.

American Aquatic Testing, Inc., on behalf of Alpha Analytical, performed two static-renewal acute toxicity tests for the Outfalls 001 and 002 by exposing mysid (i.e., *Mysidopsis bahia*) and sheepshead minnow (i.e., *Cyprinodon variegatus*) to the samples for forty-eight hours in a static-renewal test system. All results indicate no exceedances of the respective SPDES Permit action levels, as shown in the laboratory analytical results attached hereto.

The Outfall 001 discharge was sampled on November 17, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 432 gpm, or 0.62 MGD. The Outfall 001 discharge was sampled again on November 18, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 358 gpm, or 0.52 MGD. The Outfall 001 discharge sample results indicate no exceedances of toxicity action levels specified in the SPDES Permit for Outfall 001. As shown in the attached laboratory analytical results and below table, there was a 95% survival in 100% effluent compared to the control, so the TUa was determined to be <1.0 for the opossum shrimp tests in accordance with the WET Testing evaluation procedure described in the SPDES Permit. There was no statistically-significant toxicity in 100% effluent compared to the control, so the toxicity unit-acute (TUa) was determined to be 0.3 for the sheepshead minnow test, in accordance with the WET Testing evaluation procedure described in the SPDES Permit.

The Outfall 002 discharge was sampled on November 17, 2020, for the purpose of performing acute WET testing, operating at a flow rate of approximately 312 gpm, or 0.45 MGD. The Outfall 002 discharge was sampled again on November 18, 2020, for the purpose of renewing the acute toxicity test sample, operating at a flow rate of approximately 310 gpm, or 0.45 MGD. The Outfall 002 discharge sample results indicate no exceedances of toxicity action levels specified in the SPDES Permit for Outfall 002. As shown in the attached laboratory analytical results and below table, there was a 95% survival in 100% effluent compared to the

control, so the TUa was determined to be <1.0 for the opossum shrimp tests in accordance with the WET Testing evaluation procedure described in the SPDES Permit. There was no statistically-significant toxicity in 100% effluent compared to the control, so the TUa was determined to be 0.3 for the sheepshead minnow tests, in accordance with the WET Testing evaluation procedure described in the SPDES Permit.

Should there be any questions or comments on this submission, please do not hesitate to contact me at 718-404-0652.

Discharge Location	Species	Analysis Type	Action Level (TUa)	48-Hr LC_{50} (% Effluent)	Survival in 100% Effluent (%)	Calculated TUa[1]	In Compliance
Outfall 001	Opossum Shrimp	Invertebrate	1.8	>100	95	<1.0	Yes
	Sheepshead Minnow	Vertebrate	1.8	>100	100	0.3[2]	Yes
Outfall 002	Opossum Shrimp	Invertebrate	1.8	>100	95	<1.0	Yes
	Sheepshead Minnow	Vertebrate	1.8	>100	100	0.3[2]	Yes

1. TUa = (100)/(48 hr LC50) or (100)/(48 hr EC50)
2. TUa is reported as 0.3 if there is no statistically significant toxicity in 100% effluent as compared to control, as per SPDES permit.

Sincerely,

Frank Messina
Project Manager

Attachments

cc: Randy Whitcher, NYSDEC, Division of Environmental Remediation – Albany, NY
Regional Water Engineer (NYSDEC Region 2) – Long Island City, NY
04/Brooklyn Public Library, Brooklyn Collection – Brooklyn, NY
Justin Kennedy, P.E., Roux Environmental Engineering and Geology, D.P.C.

Outfall 001 WET Testing Results
Fourth Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		4 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	11/18/20	COMPLETION DATE:	11/20/20
INITIATION TIME:	4:20 pm	COMPLETION TIME:	3:20pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally
President, Laboratory Director

12/01/20
Date

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 11/18/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 11/19/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1767.8 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-04 (001)

Species: C. variegatus

Hatch Date: 11-14-20

Dilution Water: ASW

Start Date/Time: 11-18-20 1620

End Date/Time: 11/20/20 1520

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.8	7.2	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	7.3	20.0	19.0	19.0	10	10	10
12.5	A	7.4	7.6	7.2	20.0	19.0	19.0	10	10	10
	B	7.4	7.6	7.3	20.0	19.0	19.0	10	10	10
25	A	7.4	7.7	7.3	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	7.3	20.0	19.0	19.0	10	10	10
50	A	7.5	7.8	7.2	20.0	19.0	19.0	10	10	10
	B	7.5	7.8	7.1	20.0	19.0	19.0	10	10	10
75	A	7.6	7.9	7.1	20.0	19.0	19.0	10	10	10
	B	7.6	7.9	6.9	20.0	19.0	19.0	10	10	10
100	A	7.8	8.0	6.7	20.0	19.0	19.0	10	10	10
	B	7.8	8.2	6.6	20.0	19.0	19.0	10	10	10
Initials		JC	KB	KB	JC	KB	KB	JC	MF	KB
Date		11/18	11/19	11/20	11/18	11/19	11/20	11/18	11-19	11/20

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	140	140		0.00	0.00	0.00	0.00
100%	4160	2470		0.02	0.00	0.41	0.18
Initials	JC	JC		JC	JC	MF	MF
Date	11/18	11/19		11/18	11/19	11-18	11-19

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.1	8.1	8.1	25.0	25.2	25.7
12.5	8.1	8.1	8.2	25.0	25.2	25.4
25	8.1	8.1	8.2	25.0	25.2	25.4
50	8.0	8.2	8.2	25.0	25.1	25.5
75	8.1	8.2	8.3	25.0	25.2	25.7
100	8.1	8.2	8.3	25.0	25.2	25.9
Initials	JC	KB	KB	JC	KB	KB
Date	11/18	11/19	11/20	11/18	11/19	11/20

Observations: (1) 430 JC 11/19

ACF48PAR.WK3

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Roux

Address: 209 Shafter St

Islandia NY 11749

Phone: 908-894-0023

Fax:

Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP

Project Location: 400 Kingsland Ave, Brooklyn NY 11222

Project #: 0172.0030Y060

Project Manager: Courtney Lind

ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

ANALYSIS

Whole Effluent Toxicity Testing

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing	Sample Specific Comments	TOTAL # BOTTLES
	Outfall 001	11/17/20	0936	E	TG	☒	Temp 2.0°C	2
	Outfall 002	11/17/20	1036	E	TG	☒	temp 3.0°C	2
						☐		2
						☐		2
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		

Container Type	P	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
Darnell King	11/17/20		11/17/20 12:12
	11/17/20 13:35	T. Polo	11/18/20 0800

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

289-06-04

ALPHA ANALYTICAL
World Class Chemistry

CHAIN OF CUSTODY

PAGE 1 OF 1

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Roux
Address: 209 Shafter St
Islandia NY 11749
Phone: 908-894-0023
Fax:
Email: clind@rouxinc.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: EMGPRP
Project Location: 400 Kingsland Ave, Brooklyn NY 11222
Project #: 0172.0030Y060
Project Manager: Courtney Lind
ALPHA Quote #: 10194

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: WAL 4606

Regulatory Requirements/Report Limits

State/Fed Program
Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only) ISTP	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Effluent Toxicity Testing												Sample Specific Comments	TOTAL # BOTTLES
202420	Outfall 001	11/18/20	1100	E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Temp 3.0°C	2
202421	Outfall 002	11/18/20	1131	E	TG	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	temp 2.7°C	2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	P	-	-	-	-	-	-	-	-	-	-	-		
					Preservative	A	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
Darnell King	11/18/20 1200	AAL	11/18/20 1200
AAL	11/18/20 1930		
	11-19-20 750	T. Pellap	11/19/20 0750

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		001
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		1 day

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	11/18/20	COMPLETION DATE:	11/18/20
INITIATION TIME:	6:05 pm	COMPLETION TIME:	5:05 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	95%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

Christopher J. Nally
President, Laboratory Director

12/01/20
Date

MORTALITY DATA	*Mysidopsis bahia*	Test date: 11/18/20 Outfall 001	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	9
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	9	9
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 10/26/20

Toxicant: Potassium chloride

48 hour LC_{50}: 637.3 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-04 (001)

Species: M.bahia

Hatch Date: 11-17-20

Dilution Water: ASW

Start Date/Time: 11-18-20 1805

End Date/Time: 11/20/20 1705

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.6	6.7	20.0	19.0	19.0	10	10	10
	B	7.4	7.6	6.7	20.0	19.0	19.0	10	10	10
12.5	A	7.4	7.6	6.7	20.0	19.0	19.0	10	10	10
	B	7.4	7.6	6.7	20.0	19.0	19.0	10	10	10
25	A	7.4	7.7	6.8	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	6.7	20.0	19.0	19.0	10	10	10
50	A	7.5	7.8	6.9	20.0	19.0	19.0	10	10	9
	B	7.5	7.8	6.7	20.0	19.0	19.0	10	10	10
75	A	7.6	7.8	6.7	20.0	19.0	19.0	10	10	10
	B	7.6	7.9	6.6	20.0	19.0	19.0	10	10	10
100	A	7.8	7.9	6.8	20.0	19.0	19.0	10	9	9
	B	7.8	8.0	6.7	20.0	19.0	19.0	10	10	10
Initials		JC	KB	KB	JC	KB	KB	JC	KB	KB
Date		11/18	11/19	11/20	11/18	11/19	11/20	11/18	11/19	11/20

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 2	Sm 2
Control	140	140		0.00	0.00	0.00	0.00
100%	460	430		0.02	0.00	0.41	0.18
Initials	JC	JC		JC	JC	MF	MF
Date	11/18	11/19		11/18	11/19	11-18	11-19

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.1	8.1	8.1	25.0	25.0	25.7
12.5	8.1	8.1	8.1	25.0	25.1	25.4
25	8.1	8.1	8.2	25.0	25.2	25.4
50	8.0	8.1	8.2	25.0	25.2	25.5
75	8.1	8.2	8.2	25.0	25.2	25.6
100	8.1	8.2	8.3	25.0	25.3	25.9
Initials	JC	KB	KB	JC	KB	KB
Date	11/18	11/19	11/20	11/18	11/19	11/20

Observations:

Project Number: 289-06-04
Species: M. bahia & C. variegatus

Beginning Date & Time: 11-18-20 1805
Ending Date & Time: 11/20/20 1705

Salinity and pH Adjustments

American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	2.2	25.0	8.4	8.1	—	—	JC	11/18
02	2.2	25.0	8.2	8.1	—	—	MF	11-19

Observations :

Outfall 002 WET Testing Results
Fourth Quarter 2020

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Cyprinodon variegatus* (scientific name)	sheepshead minnow (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		4 days

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	11/18/20	COMPLETION DATE:	11/20/20
INITIATION TIME:	6:05 pm	COMPLETION TIME:	5:05 pm

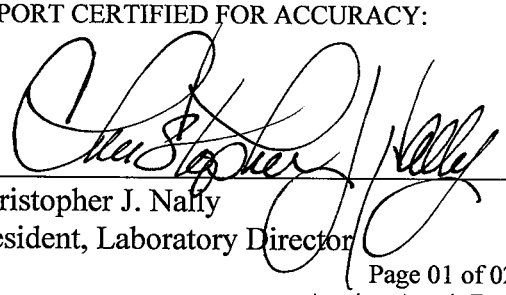
48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	100%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:



Christopher J. Nally
President, Laboratory Director

12/01/20
Date

MORTALITY DATA	*Cyprinodon variegatus*	Test date: 11/1820 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	10	10
	B	10	10	10
50.0	A	10	10	10
	B	10	10	10
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	10	10

STATISTICS SUMMARY:

24 hour LC_{50}: >100%

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 11/19/20

Toxicant: Potassium chloride

48 hour LC_{50}: 1767.8 ppm

Calculation method: Probit

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-04

Species: C. variegatus

Hatch Date: 11-14-20

Dilution Water: ASW

(002)

Start Date/Time: 11-18-20 1805

End Date/Time: 11/20/20 1705

Test Type: 48hr. SDR

Concentration %	Rep	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.7	7.3	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	7.3	20.0	19.0	19.0	10	10	10
12.5	A	7.4	7.7	7.2	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	7.3	20.0	19.0	19.0	10	10	10
25	A	7.5	7.7	7.3	20.0	19.0	19.0	10	10	10
	B	7.5	7.7	7.3	20.0	19.0	19.0	10	10	10
50	A	7.6	7.8	7.2	20.0	19.0	19.0	10	10	10
	B	7.6	7.9	7.2	20.0	19.0	19.0	10	10	10
75	A	7.8	7.9	7.1	20.0	19.0	19.0	10	10	10
	B	7.8	8.0	7.1	20.0	19.0	19.0	10	10	10
100	A	8.2	8.0	7.1	20.0	19.0	19.0	10	10	10
	B	8.2	8.1	6.9	20.0	19.0	19.0	10	10	10
Initials		JC	KB	KB	JC	KB	KB	JC	MF	KB
Date		11/18	11/19	11/20	11/18	11/19	11/20	11/18	11-19	11/20

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	140	140		0.00	0.00	0.00	0.00
100%	470	470		0.01	0.00	0.35	0.47
Initials	JC	JC		JC	JC	MF	MF
Date	11/18	11/19		11/18	11/18	11-18	11-19

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.2	8.1	8.1	25.0	25.1	25.6
12.5	8.2	8.1	8.2	25.0	25.1	25.5
25	8.1	8.1	8.2	25.0	25.1	25.4
50	8.1	8.1	8.2	25.0	25.1	25.4
75	8.1	8.1	8.3	25.0	25.1	25.5
100	8.1	8.1	8.3	25.0	25.3	25.8
Initials	JC	KB	KB	JC	KB	KB
Date	11/18	11/19	11/20	11/18	11/19	11/20

Observations:

ACF48PAR.WK3

NYSPDES BIOMONITORING REPORT FORM: SALTWATER ACUTE TOXICITY

Permit#:	NY 0267724
Facility Name:	ExxonMobil Oil Corporation Greenpoint Remediation Project
Reporting Location:	400 Kingsland Avenue Brooklyn, NY 11222
Contact Person:	Frank Messina
Phone Number:	(716) 404-0652
Laboratory:	American Aquatic Testing, Inc.

BIOASSAY INFORMATION:

OUTFALL #:		002
EFFLUENT TYPE:		Final
TEST TYPE:		Static daily-renewal
TEST DURATION:		48 hrs
TEST ORGANISM:	*Mysidopsis bahia* (scientific name)	opossum shrimp (common name)
TEST ENDPOINT:		LC_{50}
TEST ORGANISM AGE:		1 day

SUMMARY OF FINAL RESULTS:

INITIATION DATE:	11/18/20	COMPLETION DATE:	11/20/20
INITIATION TIME:	6:05 pm	COMPLETION TIME:	5:05 pm

48 hour LC_{50} /EC_{50} (% effluent):	>100%
Survival in 100 % effluent:	95%

QUALITY CONTROL SUMMARY

Control survival (%):	100%
Temperature maintained +/- 1 °C?	Yes
Dissolved oxygen ≥ minimum?	Yes
Loading factor ≤ maximum?	Yes
Two or more conc. w/trend deviation?	No

CERTIFICATION:

REPORT CERTIFIED FOR ACCURACY:

12/01/20

Christopher J. Nally — Date
President, Laboratory Director

MORTALITY DATA	*Mysidopsis bahia*	Test date: 11/18/20 Outfall 002	Exxon Mobil Greenpoint Project

TEST CONCENTRATION in % effluent		LIVE COUNT 00 Hour	LIVECOUNT 24 Hours	LIVECOUNT 48 Hours
CONTROL	A	10	10	10
	B	10	10	10
12.5	A	10	10	10
	B	10	10	10
25.0	A	10	9	9
	B	10	10	10
50.0	A	10	10	10
	B	10	9	9
75.0	A	10	10	10
	B	10	10	10
100.0	A	10	10	10
	B	10	9	9

STATISTICS SUMMARY:

24 hour LC_{50}: >100 %

48 hour LC_{50}: >100%

Calculation method: N/A

48 hr. confidence interval: N/A

SRT INFORMATION:

Date: 10/26/20

Toxicant: Potassium chloride

48 hour LC_{50}: 637.3 ppm

Calculation method: Probit Method

48 hr. confidence interval: N/A

Saltwater Acute Test

American Aquatic Testing, Inc.

Job #: 289-06-04

Species: M. bahia

Hatch Date: 11-17-20

Dilution Water: ASW

(002)

Start Date/Time: 11-18-20 1805

End Date/Time: 11/20/20 1705

Test Type: 48hr. SDR

Concentration %	Rep.	Dissolved Oxygen (mg/L)			Temperature (C)			Live Count		
		0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	A	7.4	7.8	6.7	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	6.8	20.0	19.0	19.0	10	10	10
12.5	A	7.4	7.7	6.8	20.0	19.0	19.0	10	10	10
	B	7.4	7.7	6.9	20.0	19.0	19.0	10	10	10
25	A	7.5	7.7	6.8	20.0	19.0	19.0	10	9	9
	B	7.5	7.7	6.9	20.0	19.0	19.0	10	10	10
50	A	7.6	7.8	6.8	20.0	19.0	19.0	10	10	10
	B	7.6	7.9	6.8	20.0	19.0	19.0	10	9	9
75	A	7.8	7.9	6.8	20.0	19.0	19.0	10	10	10
	B	7.8	8.0	6.8	20.0	19.0	19.0	10	10	10
100	A	8.2	8.2	6.8	20.0	19.0	19.0	10	10	10
	B	8.2	8.4	6.8	20.0	19.0	19.0	10	9	9
Initials		JC	KB	KB	JC	KB	KB	JC	MK	KB
Date		11/18	11/19	11/20	11/18	11/19	11/20	11/18	11-19	11/20

Concentration	Alkalinity (mg/L)			Chlorine (mg/L)	Chlorine	Ammonia	
	0 hr.	24 hr.	48 hr.	Sample 1	Sample 2	Sm 1	Sm 2
Control	140	140		0.00	0.00	0.00	0.00
100%	470	470		0.01	0.00	0.35	0.47
Initials	JC	JC		JC	JC	MK	MK
Date	11/18	11/19		11/18	11/19	11/18	11-19

Concentration %	pH (std units)			Salinity (ppt)		
	0 hr.	24 hr.	48 hr.	0 hr.	24 hr.	48 hr.
Control	8.2	8.1	8.1	25.0	25.1	25.5
12.5	8.2	8.1	8.1	25.0	25.2	25.3
25	8.1	8.1	8.2	25.0	25.2	25.4
50	8.1	8.1	8.2	25.0	25.2	25.4
75	8.1	8.1	8.3	25.0	25.1	25.5
100	8.1	8.1	8.3	25.0	25.2	25.8
Initials	JC	KB	KB	JC	KB	KB
Date	11/18	11/19	11/20	11/18	11/19	11/20

Observations:

ACF48PAR.WK3

Project Number: 289-06-04
Species: M. balthica & C. variegatus

Beginning Date & Time: 11-18-20 1805
Ending Date & Time: 11/20/20 1705

Salinity and pH Adjustments
American Aquatic Testing, Inc.

Sample Number	Initial Salinity	Final Salinity	Initial pH	Final pH	Adjusted pH	mls of acid base add.	Initials	Date
01	1.5	25.0	8.4	8.1	—	—	JC	11/18
02	1.5	25.0	8.4	8.1	—	—	MH	11-19

Observations :

Attachment B

Revised Form NY-2C SPDES Modification

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Application Form NY-2C

New and Existing Industrial Facilities

State Pollutant Discharge Elimination System Permitting Program

DEC Identification Number	SPDES Permit Number	Facility Name	Form Approved: 5/12/2023
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint	

Form NY-2C PART I SPDES

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

New York State Department of Environmental Conservation
Application for SPDES Permit to Discharge Wastewater
GENERAL INFORMATION

SECTION 1. PERMIT ACTION REQUESTED

Permit Action Requested

1.1 What is the reason for submitting this application?

- ☐ A NEW proposed Discharge
- ☐ A RENEWAL of an existing permit
- ☐ An EXISTING discharge currently without permit
- ☐ An EBPS REQUEST FOR INFORMATION response
- ☑ A MODIFICATION of the existing permit (describe below)

Relocation/consolidation of existing treatment facility

1.2 Increased Discharge Request

Is this application a request for an increase in the quantity of water discharged from your facility to the waters of the State?

- ☐ Yes ➔ Describe the increase:
- ☑ No ➔ Skip to Item 2.1

SECTION 2. PERMITTEE & FACILITY NAME, LEGAL STATUS, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))

Permittee & Facility Name, Legal Status, Mailing Address, and Location

2.1 Permittee Name

ExxonMobil Oil Corporation. Att. Michael Burghardt

2.2 Permittee Mailing Address

Street or P.O. box
38 Varick Street

City or town	State	ZIP code
Brooklyn	NY	11222

2.3 Permitee Legal Status

- ☐ Public—federal
- ☐ Public—state
- ☐ Other public (specify)_____
- ☑ Private
- ☐ Other (specify) _____

2.4 Facility Name

ExxonMobil Greenpoint Petroleum Remediation Project

2.5 NYSDEC Identification Number

2-6101-00107-0026

2.6 Facility Contact

Name (first and last)	Title	Phone number
Courtney Lind	Senior Engineer	(631) 232-2600

Email address
clind@rouxinc.com

2.7 Facility Location

Street, route number, or other specific identifier
38 Varick Street

County name	County code (if known)	
Kings		

City or town	State	ZIP code
Brooklyn	NY	11222

SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))

SIC and NAICS Codes

3.1	SIC Code(s)	Description (optional)
	4959	Groundwater Treatment

3.2	NAICS Code(s)	Description (optional)
	562910	Remediation and cleanup of soil, and/or ground water

SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))

Operator Information

4.1 **Name of Operator**

Justin Kennedy, P.E.

4.2 Is the name you listed in Item 4.1 also the owner?

☐ Yes ➔ Skip to Item 5.1 ☑ No

4.3 **Operator Status**

☐ Public—federal ☐ Public—state ☐ Other public (specify)_____

☑ Private ☐ Other (specify) _____

4.4 **Phone Number of Operator**

(631) 232-2600

Operator Information Continued

4.5 **Operator Address**

Street or P.O. Box
38 Varick Street

City or town	State	ZIP code
Brooklyn	NY	11222

Email address of operator
jkennedy@rouxinc.com

SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))

Indian Land

5.1 Is the facility located on Indian Land?

☐ Yes ☑ No

SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))

Existing Environmental Permits

6.1 **Existing Environmental Permits** (check all that apply and print or type the corresponding permit number for each)

☑ SPDES	☐ RCRA (hazardous wastes)	☐ UIC (underground injection)
☐ PSD (air emissions)	☐ Nonattainment program (CAA)	☐ NESHAPs (CAA)
☐ Ocean dumping (MPRSA)	☐ Dredge or fill (CWA Section 404)	☑ Other (specify) See Attachment 1a

SECTION 7. MAP (40 CFR 122.21(f)(7))

Map

7.1 Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.)

☑ Yes ☐ No

SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))

Nature of Business

8.1 Describe the nature of your business.

The Greenpoint Remediation project operates under the oversight of the NYSDEC, and in accordance with the requirements of the Consent Decree between the State of New York and ExxonMobil, filed on March 1, 2011, in the United States District Court, Eastern District of New York (Consent Decree). The remediation system provides petroleum hydrocarbon (free-product) recovery and groundwater treatment for a subsurface petroleum accumulation. Petroleum free-product will continue to be recovered via operation of dual-pump liquid extraction (DPLE) recovery wells. and then conveyed to an operating groundwater treatment facility for treatment. Following treatment, the groundwater will be conveyed to the discharge Outfall within Newtown Creek, Outfall 002.

SECTION 9. WATER SUPPLY & COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))

Water Supply Source(s)

9.1 What water supply source(s) does your facility use? Identify the name or owner of each source. (check all that apply)

☐ Municipal ☐ Private Intake ☐ Private Well ☑ Other (specify)

Owner: _____ _____ _____ ExxonMobil Recovery wells

9.2 Provide the amount of water typically consumed from each of these sources.

Municipal	MGD	Private Well		MGD
Private Intake	MGD	Other	750.00	MGD

9.3 Is the facility located within a sole source aquifer as shown on Exhibit 2C-6?

☑ Yes ➔Complete Application Supplement B (see SPDES website) ☐ No

Cooling Water Intake Structures

9.4 Does your facility use any of these water sources for cooling water?

☐ Yes ☑ No ➔SKIP to Item 10.1.

9.5 Identify the sources used for cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J and NYSDEC Commisioner's Policy 52 (CP-52) may have additional application requirements. Consult with NYSDEC to determine if additional information is needed.)

Thermal Discharges

9.6 If your industry group is listed (see instructions), or the temperature of your discharge exceeds the receiving water temperature by greater than 3°F, provide the following data in (°F):

Avg. Temp. Max Temp. Avg. Delta T Max Delta T

SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))

Variance Requests

10.1 Do you intend to request or renew one or more variances pursuant to 6 NYCRR 702.17 or authorized at 40 CFR 122.21(m)? (Check all that apply). Consult with NYSDEC to determine what information is needed.

☐ Fundamentally different factors (CWA Section 301(n))

☐ Water quality related effluent limitations (CWA Section 302(b)(2))

☐ Non-conventional pollutants (CWA Section 301(c) and (g))

☐ Thermal discharges (CWA Section 316(a))

☐ NYS WQBEL (6 NYCRR 702.17)

☑ Not applicable

DEC Identification Number	SPDES Permit Number	Facility Name	Form Approved: 5/12/2023
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint	

SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Part I Checklist

11.1 In Column 1 below, mark the sections of Form NY-2C Part I that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert NYSDEC. Note that not all applicants are required to provide attachments.

Column 1	Column 2
☑ Section 1: Permit Action Requested	☐ w/ attachments
☑ Section 2: Name, Mailing Address, and Location	☐ w/ attachments
☑ Section 3: SIC Codes	☐ w/ attachments
☑ Section 4: Operator Information	☐ w/ attachments
☑ Section 5: Indian Land	☐ w/ attachments
☑ Section 6: Existing Environmental Permits	☑ w/ attachments
☑ Section 7: Map	☑ w/ topographic map ☐ w/ additional attachments
☑ Section 8: Nature of Business	☐ w/ attachments
☑ Section 9: Water Supply & CWIS	☐ w/ attachments ☑ w/ Sole Source Aquifer Supplement
☑ Section 10: Variance Requests	☐ w/ attachments
☑ Section 11: Checklist	☐ w/ attachments

PART II of Form NY-2C begins on the next page.

DEC Identification Number	SPDES Permit Number	Facility Name	Form Approved: 5/12/2023
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint	

Form NY-2C PART II SPDES

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

New York State Department of Environmental Conservation Application for SPDES Permit to Discharge Wastewater

NEW AND EXISTING INDUSTRIAL OPERATIONS DETAILED INFORMATION

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1)) & RECEIVING WATER DESCRIPTION (6 NYCRR 750-1.7(a))

Outfall Location & Receiving Water Description

1.1 Provide information on each of the facility's outfalls and the receiving waters in the table below.

	Outfall _____	Outfall _____	Outfall _____
Latitude	40 ° 43 ′ 41.1″ N	° ′ ″	° ′ ″
Longitude	73 ° 55 ′ 56.1″ W	° ′ ″	° ′ ″
Receiving Water Name	Newtown Creek		
Water Index Number (WIN)	(MW2.1) ER-LI- 4		
Waterbody Inventory/ Priority Waterbodies List (WI/PWL) Segment	1702-0002		
Water Classification	SD		
Groundwater Discharges Only:			
Soil Type			
Depth to Water Table	ft	ft	ft

SECTION 2. LINE DRAWING (40 CFR 122.21(g)(2))

Line Drawing

2.1 Have you attached a line drawing to this application that shows the water flow through your facility with a water balance? (See instructions for drawing requirements. See Exhibit 2C–3 at end of instructions for example.)

☑ Yes ☐ No

SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(g)(3))

Average Flows and Treatment

3.1 For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets if necessary.

****Outfall Number**** 002

Operations Contributing to Flow

Operation	Average Flow	Maximum Flow
Remediation System Discharge	1.08 MGD	1.30 MGD
	MGD	MGD
	MGD	MGD
	MGD	MGD

Treatment Units

Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge
See Supplemental information following application		

Average Flows and Treatment Continued

3.1 cont.

****Outfall Number**** _____

Operations Contributing to Flow

Operation	Average Flow	Maximum Flow
	MGD	MGD
	MGD	MGD
	MGD	MGD
	MGD	MGD

Treatment Units

Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge

****Outfall Number**** _____

Operations Contributing to Flow

Operation	Average Flow	Maximum Flow
	MGD	MGD
	MGD	MGD
	MGD	MGD
	MGD	MGD

Treatment Units

Description (include size, flow rate through each treatment unit, retention time, etc.)	Code from Table 2C-1	Final Disposal of Solid or Liquid Wastes Other Than by Discharge

WTCs

3.2 Does the facility utilize or plan to utilize any water treatment chemicals that can potentially be discharged from one or more outfalls?

☑ Yes ➔ Complete Table F ☐ No ➔ SKIP to Item 3.3.

Mixing Zone Form

3.3 Has a Mixing Zone Analysis Form been completed and attached? All applicants must complete at least the Simple Form for each wastewater outfall to surface waters. Indicate which form was completed and is attached to this application.

☐ Yes ➔ Simple Form ☑ Yes ➔ Detailed Form

DEC Identification Number	SPDES Permit Number	Facility Name	Form Approved: 5/12/2023
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint	

SECTION 4. INTERMITTENT FLOWS (40 CFR 122.21(g)(4))

Intermittent Flows

4.1 Except for storm runoff, leaks, or spills, are any discharges described in Sections 1 and 3 intermittent or seasonal?

☐ Yes ☑ No ➔ SKIP to Section 5.

4.2 Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.

Outfall Number	Operation (list)	Frequency		Flow Rate		Duration
		Average Days/Week	Average Months/Year	Long-Term Average	Maximum Daily	
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days
		days/week	months/year	MGD	MGD	days

SECTION 5. PRODUCTION (40 CFR 122.21(g)(5))

Applicable ELGs

5.1 Do any effluent limitation guidelines (ELGs) promulgated by EPA under Section 304 of the CWA apply to your facility?

☐ Yes ☑ No ➔ SKIP to Item 5.5.

5.2 Provide the following information on applicable ELGs.

ELG Category	ELG Subcategory	Regulatory Citation

Production-Based Limitations

5.3 Are any of the applicable ELGs expressed in terms of production (or other measure of operation)?

☐ Yes ☐ No ➔ SKIP to Item 5.5.

5.4 Provide an actual measure of daily production expressed in terms and units of applicable ELGs.

Outfall Number	Operation, Product, or Material	Quantity per Day	Unit of Measure

Specific Industry

5.5 Is your industry type listed as a specific industry requiring submission of a supplemental application form (see instructions)?

☐ Yes, supplemental form attached ☑ No ➔ SKIP to Section 6.

SECTION 6. SCHEDULED IMPROVEMENTS (40 CFR 122.21(g)(6))

Upgrades and Improvements

6.1 Are you presently voluntarily improving or required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?

☐ Yes ☑ No ➔ SKIP to Item 6.3.

6.2 Briefly identify each applicable project in the table below.

Brief Identification and Description of Project	Affected Outfalls (list outfall number)	Source(s) of Discharge	Final Compliance Dates	
			Required	Projected

6.3 Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? *(optional item)*

☐ Yes ☑ No ☐ Not applicable

SECTION 7. EFFLUENT AND INTAKE CHARACTERISTICS (40 CFR 122.21(g)(7))

Effluent and Intake Characteristics

See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.

Table A. Conventional and Non-Conventional Pollutants

7.1 Are you requesting a waiver from NYSDEC for one or more of the Table A pollutants for any of your outfalls?

☐ Yes ☑ No ➔ SKIP to Item 7.3.

7.2 If yes, indicate the applicable outfalls below. Attach waiver request and other required information to the application.

Outfall Number _____ Outfall Number _____ Outfall Number _____

7.3 Have you completed monitoring for all Table A pollutants at each of your outfalls for which a waiver has not been requested and attached the results to this application package?

☑ Yes ☐ No;a waiver request has been attached for all pollutants at all outfalls.

Table B. Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants

7.4 Do any of the facility's processes that contribute wastewater fall into one or more of the primary industry categories listed in Exhibit 2C-5?

☐ Yes ☑ No ➔SKIP to Item 7.8.

7.5 Have you checked "Testing Required" for all toxic metals, cyanide, and total phenols in Section 1 of Table B?

☐ Yes ☐ No

7.6 List the applicable primary industry categories and check the boxes indicating the required GC/MS fraction(s) identified in Exhibit 2C-5.

Primary Industry Category	Required GC/MS Fraction(s) (Check applicable boxes.)			
	☐ Volatile	☐ Acid	☐ Base/Neutral	☐ Pesticide
	☐ Volatile	☐ Acid	☐ Base/Neutral	☐ Pesticide
	☐ Volatile	☐ Acid	☐ Base/Neutral	☐ Pesticide

Effluent and Intake Characteristics Continued

7.7	Have you checked "Testing Required" for all required pollutants in Sections 2 through 5 of Table B for each of the GC/MS fractions checked in Item 7.6? ☐ Yes ☐ No
7.8	Have you checked "Believed Present" or "Believed Absent" for all pollutants listed in Sections 1 through 5 of Table B where testing is not required? ☑ Yes ☐ No
7.9	Have you provided (1) quantitative data for those Section 1, Table B, pollutants for which you have indicated testing is required or (2) quantitative data or other required information for those Section 1, Table B, pollutants that you have indicated are "Believed Present" in your discharge? ☑ Yes ☐ No
7.10	Have you provided (1) quantitative data for those Sections 2 through 5, Table B, pollutants for which you have determined testing is required or (2) quantitative data or an explanation for those Sections 2 through 5, Table B, pollutants you have indicated are "Believed Present" in your discharge? ☑ Yes ☐ No
Table C. Certain Conventional and Non-Conventional Pollutants	
7.11	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls? ☑ Yes ☐ No
7.12	Have you completed Table C by providing (1) quantitative data for those pollutants that are limited either directly or indirectly in an ELG and/or (2) quantitative data or an explanation for those pollutants for which you have indicated "Believed Present"? ☑ Yes ☐ No
Table D. Certain Hazardous Substances and Asbestos	
7.13	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table D for all outfalls? ☑ Yes ☐ No
7.14	Have you completed Table D by (1) describing the reasons the applicable pollutants are expected to be discharged and (2) by providing quantitative data, if available? ☑ Yes ☐ No
Table E. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD)	
7.15	Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed in the instructions, or do you know or have reason to believe that TCDD is or may be present in the effluent? ☐ Yes ➔ Complete Table E. ☑ No ➔ SKIP to Section 8.
7.16	Have you completed Table E by reporting *qualitative* data for TCDD? ☐ Yes ☑ No

SECTION 8. USED OR MANUFACTURED TOXICS (40 CFR 122.21(g)(9))

Used or Manufactured Toxics

8.1	Are any other pollutants, substances, or components of substances, not already listed in Tables A-E, used or manufactured at your facility as an intermediate or final product or byproduct? ☐ Yes ☑ No ➔ SKIP to Section 9.		
8.2	List the pollutants below.		
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

SECTION 9. BIOLOGICAL TOXICITY TESTS (40 CFR 122.21(g)(11))

Biological Toxicity Tests

9.1 Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made within the last three years on (1) any of your discharges or (2) on a receiving water in relation to your discharge?

☑ Yes ☐ No ➔ SKIP to Section 10.

9.2 Identify the tests and their purposes below.

Test(s)	Purpose of Test(s)	Submitted to NYSDEC?	Date Submitted
Acute Whole Effluent Toxicity (WET) Testing	5 Year SPDES Testing requirements	☑ Yes ☐ No	12/28/2020
		☐ Yes ☐ No	
		☐ Yes ☐ No	

SECTION 10. CONTRACT ANALYSES (40 CFR 122.21(g)(12))

Contract Analyses

10.1 Were any of the analyses reported in Section 7 performed by a contract laboratory or consulting firm?

☑ Yes ☐ No ➔ SKIP to Section 11.

10.2 Provide information for each contract laboratory or consulting firm below.

	Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
Name of laboratory/firm	Eurofins Lancaster Laboratories, Inc.		
ELAP Cert No.	10670		
Laboratory address	2425 New Holland Pike Lancaster, PA 17601		
Phone number	(717) 656-2300		
Pollutant(s) analyzed	VOCs, SVOCs, Metals, General Chemisty, Wet Chemistry		

SECTION 11. ADDITIONAL INFORMATION (40 CFR 122.21(g)(13))

Additional Information

11.1 Does your facility use, produce, store, distribute, or otherwise dispose of any significant quantity of substances listed in Tables B, C, D, E or those substances identified in Item 8.2?

☐ Yes ➔ Complete Table G. ☑ No ➔ SKIP to Item 11.2.

11.2 Does your facility utilize pumping stations to convey wastewaters on the site and/or in wastewater treatment?

☐ Yes ➔ Complete Table H. ☑ No ➔ SKIP to Item 11.3.

11.3 Has NYSDEC requested additional information?

☐ Yes ☑ No ➔ SKIP to Section 12.

11.4 List the information requested and attach it to this application.

1.	3.
2.	4.

SECTION 12. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

12.1 In Column 1 below, mark the sections of Form NY-2C that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert NYSDEC. Note that not all applicants are required to complete all sections or provide attachments.

Column 1	Column 2
☑ Section 1: Outfall Location	☐ w/ attachments
☑ Section 2: Line Drawing	☑ w/ line drawing ☐ w/ additional attachments
☑ Section 3: Average Flows and Treatment	☐ w/ attachments ☐ w/ Simple MZ Form ☑ w/ Table F ☑ w/ Detailed MZ Form
☑ Section 4: Intermittent Flows	☐ w/ attachments
☑ Section 5: Production	☐ w/ attachments
☑ Section 6: Improvements	☐ w/ attachments ☐ w/ optional additional sheets describing any additional pollution control plans
☑ Section 7: Effluent and Intake Characteristics	☐ w/ request for a waiver and supporting information ☐ w/ explanation for identical outfalls ☐ w/ primary industry supplemental form ☐ w/ additional attachments ☑ w/ Table A ☑ w/ Table B ☑ w/ Table C ☑ w/ Table D ☑ w/ Table E ☑ w/ analytical results as an attachment
☑ Section 8: Used or Manufactured Toxics	☐ w/ attachments
☑ Section 9: Biological Toxicity Tests	☐ w/ attachments
☑ Section 10: Contract Analyses	☐ w/ attachments
☑ Section 11: Additional Information	☐ w/ attachments ☐ w/ Table G ☐ w/ Table H
☑ Section 12: Checklist and Certification Statement	☐ w/ attachments

12.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Michael Burghardt	US East Supervisor
Signature 	**Date signed** February 16, 2024

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	Outfall 01A

TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii)) 1

	Pollutant	Waiver Requested (input "Yes" when applicable)	Units (specify)		Effluent: Maximum Daily Discharge (required)	Effluent: Maximum Monthly Discharge (if available)	Effluent: Long-Term Average Daily Discharge (if available)	Effluent: Number of Analyses	Intake (Optional): Long-Term Average Value	Intake (Optional): Number of Analyses
	Mark "X" in Cell A6 if you have attached a request to NYSDEC for a waiver for *all* of the pollutants listed on this table for the noted outfall.									
4										
1.	Biochemical oxygen demand (BOD5)		Concentration	µg/L	2000 U			4	1,500	4
			Mass	g	< 4088			4	3,066	4
2.	Chemical oxygen demand (COD)		Concentration	µg/L	58000 J			4	44,075	4
			Mass	g	118,546			4	90,085	4
3.	Total organic carbon (TOC)		Concentration	µg/L	6800			4	6,300	1
			Mass	g	13,899			4	12,877	1
4.	Total suspended solids (TSS)		Concentration	µg/L	2300 J			4	8,625	4
			Mass	g	4,701			4	17,629	4
5.	Ammonia (as N)		Concentration	µg/L						
			Mass	g						
6.	Flow		Rate	GPM	404			4	387	4
7.	Temperature (winter)		°C	°C	16.30			4	16.97	4
	Temperature (summer)		°C	°C	20.68			4	18.56	4
8.	pH (minimum)		Standard units	SU	7.39			4	6.95	4
	pH (maximum)		Standard units	SU	8.43			4	7.42	4
9.	Mercury[2]		Concentration	µg/L	0.00072			3		
			Mass	g	0.00147			3		

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

2 Analysis for Mercury must be performed utilizing the low-level, USEPA Method 1631

Additional Notes:

Temperature and pH were measured at the time of sampling and during lab analysis. Values are representative of field data.

U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.

J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

For analytes with both detections and non-detection results, the intake average was calculated using the average of the detection values and, for non-detections, half of the Reporting Limit.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum	01A

TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii)) 1

	Pollutant	Waiver Requested (input "Yes" when applicable)	Units (specify)		Effluent				Intake (Optional)	
					Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
	Mark "X" in Cell A6 if you have attached a request to NYSDEC for a waiver for *all* of the pollutants listed on this table for the noted outfall.									
Section 2.[3]										
1.	Perfluorobutanoic acid (PFBA)		Concentration	ng/L	13			3		
2.	Perfluoropentanoic acid (PFPeA)		Concentration	ng/L	0.029			3		
3.	Perfluorohexanoic acid (PFHxA)		Concentration	ng/L	0.04			3		
4.	Perfluoroheptanoic acid (PFHpA)		Concentration	ng/L	0.026			3		
5.	Perfluorooctanoic acid (PFOA)		Concentration	ng/L	120 I			3		
6.	Perfluorononanoic acid (PFNA)		Concentration	ng/L	9.2			3		
7.	Perfluorodecanoic acid (PFDA)		Concentration	ng/L	1.2 JI			3		
8.	Perfluoroundecanoic acid (PFUnA)		Concentration	ng/L	2 U			3		
9.	Perfluorododecanoic acid (PFDoA)		Concentration	ng/L	2 U			3		
10.	Perfluorotridecanoic acid (PFTriA)		Concentration	ng/L	2 U			3		
11.	Perfluorotetradecanoic acid (PFTeA)		Concentration	ng/L	2 U			3		
12.	Perfluorobutanesulfonic acid (PFBS)		Concentration	ng/L	47 I			3		
13.	Perfluoropentanesulfonic acid (PFPeS)		Concentration	ng/L	3.1 I			3		
14.	Perfluorohexanesulfonic acid (PFHxS)		Concentration	ng/L	8.6			3		
15.	Perfluoroheptanesulfonic Acid (PFHpS)		Concentration	ng/L	2 U			3		
16.	Perfluorooctanesulfonic acid (PFOS)		Concentration	ng/L	0.0096			3		
17.	Perfluorononanesulfonic acid (PFNS)		Concentration	ng/L	2 U			3		
18.	Perfluorodecanesulfonic acid (PFDS)		Concentration	ng/L	2 U			3		
19.	Perfluorododecanesulfonic acid (PFDoS)		Concentration	ng/L	2 U			3		
20.	Perfluorooctanesulfonamide (FOSA)		Concentration	ng/L	2 U			3		
21.	NMeFOSAA		Concentration	ng/L	3.9 U			3		
22.	NEtFOSAA		Concentration	ng/L	0.92 J			3		
23.	4:2 FTS		Concentration	ng/L	7.8 U			3		
24.	6:2 FTS		Concentration	ng/L	32			3		
25.	8:2 FTS		Concentration	ng/L	7.8 U			3		
26.	NEtFOSA		Concentration	ng/L	2 U			3		
27.	NMeFOSA		Concentration	ng/L	2 U			3		
28.	NMeFOSE		Concentration	ng/L	20 U			3		
29.	NEtFOSE		Concentration	ng/L	20 U			3		
30.	9Cl-PF3ONS		Concentration	ng/L	7.8 U			3		
31.	HFPO-DA (GenX)		Concentration	ng/L	7.8 U			3		
32.	11Cl-PF3OUdS		Concentration	ng/L	7.8 U			3		
33.	ADONA		Concentration	ng/L	7.8 U			3		
34.	3:3 FTCA		Concentration	ng/L	2.8 J			3		
35.	5:3 FTCA		Concentration	ng/L	480 U			3		
36.	7:3 FTCA		Concentration	ng/L	480 U			3		
37.	NFDHA		Concentration	ng/L	38 U			3		
38.	PFMBA		Concentration	ng/L	3.9 U			3		
39.	PFMPA		Concentration	ng/L	3.9 U			3		
40.	PFEESA		Concentration	ng/L	38 U			3		
Section 3.[4]										
1.	1,4-Dioxane		Concentration	µg/L	0.45			3		

3. Analysis for the PFAS suite of compounds must be performed utilizing USEPA's draft analytical Method 1633.

4. Analysis for 1,4-Dioxane must be performed utilizing USEPA Method 8270E SIM or 8270D SIM.

Additional Notes:

- U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.
- J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
- I Compound did not meet the ion ratio criteria.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))1

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence: Believed Present (Input "Yes" or "No" only)	Presence or Absence: Believed Absent (Input "Yes" or "No" only)	Units (specify)		Effluent: Maximum Daily Discharge (required)	Effluent: Maximum Monthly Discharge (if available)	Effluent: Long-Term Average Daily Discharge (if available)	Effluent: Number of Analyses	Intake (optional): Long- Term Average Value	Intake (optional): Number of Analyses
	Mark "X" in Cell A7 if you believe all pollutants on Table B to be absent in your discharge from the noted outfall. You need not check the "Believed Absent" box for each pollutant.											
Section 1. Toxic Metals, Cyanide, and Total Phenols												
1.1	Antimony, total (7440-36-0)	No	No	Yes	Concentration	µg/L	2 U			4	0.63 U	4
					Mass	g	< 4.09			4	< 1.29	4
1.2	Arsenic, total (7440-38-2)	Yes	Yes	No	Concentration	µg/L	1.7 J			4	4.48	4
					Mass	g	3.47			4	9.16	4
1.3	Beryllium, total (7440-41-7)	No	No	Yes	Concentration	µg/L	0.8 U			4	0.29 U	4
					Mass	g	< 1.64			4	< 0.59	4
1.4	Cadmium, total (7440-43-9)	No	No	Yes	Concentration	µg/L	2 U			4	0.44 U	4
					Mass	g	< 4.09			4	< 0.9	4
1.5	Chromium, total (7440-47-3)	No	No	Yes	Concentration	µg/L	4 U			4	1.22	4
					Mass	g	< 8.18			4	2.49	4
1.6	Copper, total (7440-50-8)	Yes	Yes	No	Concentration	µg/L	1.1 J			4	0.64	4
					Mass	g	2.25			4	1.31	4
1.7	Lead, total (7439-92-1)	Yes	Yes	No	Concentration	µg/L	0.32 J			4	0.22	4
					Mass	g	0.65			4	0.45	4
1.8	Mercury, total (7439-97-6)	No	No	Yes	Concentration	µg/L	0.00072			3		
					Mass	g	0.00147			3		
1.9	Nickel, total (7440-02-0)	Yes	Yes	No	Concentration	µg/L	1.9			4	2.4	4
					Mass	g	3.88			4	4.91	4
1.10	Selenium, total (7782-49-2)	No	No	Yes	Concentration	µg/L	2.5 U			4	0.69 U	4
					Mass	g	< 5.11			4	< 1.41	4
1.11	Silver, total (7440-22-4)	No	No	Yes	Concentration	µg/L	2 U			4	0.44 U	4
					Mass	g	< 4.09			4	< 0.9	4
1.12	Thallium, total (7440-28-0)	No	No	Yes	Concentration	µg/L	0.8 U			4	0.29 U	4
					Mass	g	< 1.64			4	< 0.59	4
1.13	Zinc, total (7440-66-6)	Yes	Yes	No	Concentration	µg/L	15 J			4	5.75 U	4
					Mass	g	30.66			4	< 11.75	4
1.14	Cyanide, total (57-12-5)	No	No	Yes	Concentration	µg/L						
					Mass	g						
1.15	Phenols, total	Yes	Yes	No	Concentration	µg/L	11 J			4	15	4
					Mass	g	22.48			4	30.66	4
Section 2. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)												
2.1	Acrolein (107-02-8)	No	No	Yes	Concentration	µg/L	10 U			3	5 U	3
					Mass	g	< 20.44			3	< 10.22	3
2.2	Acrylonitrile (107-13-1)	No	No	Yes	Concentration	µg/L	3 U			3	1.17 U	3
					Mass	g	< 6.13			3	< 2.39	3
2.3	Benzene (71-43-2)	Yes	Yes	No	Concentration	µg/L	1 U			4	86	4
					Mass	g	< 2.04			4	175.78	4
2.4	Bromoform (75-25-2)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.5	Carbon tetrachloride (56-23-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.6	Chlorobenzene (108-90-7)	No	No	Yes	Concentration	µg/L	1 U			4	0.34	4
					Mass	g	< 2.04			4	0.69	4
2.7	Chlorodibromomethane (124-48-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.8	Chloroethane (75-00-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.9	2-chloroethylvinyl ether (110-75-8)	No	No	Yes	Concentration	µg/L	1 UT			3	0.5 U	3
					Mass	g	< 2.04			3	< 1.02	3
2.10	Chloroform (67-66-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.11	Dichlorobromomethane (75-27-4)	No	No	Yes	Concentration	µg/L	1 U			4	0.49	4
					Mass	g	< 2.04			4	1.00	4
2.12	1,1-dichloroethane (75-34-3)	Yes	Yes	No	Concentration	µg/L	1 U			4	0.81	4
					Mass	g	< 2.04			4	1.66	4
2.13	1,2-dichloroethane (107-06-2)	Yes	Yes	No	Concentration	µg/L	1 U			4	2.08	4
					Mass	g	< 2.04			4	4.25	4
2.14	1,1-dichloroethylene (75-35-4)	No	No	Yes	Concentration	µg/L	1 U			4	0.77	4
					Mass	g	< 2.04			4	1.57	4
2.15	1,2-dichloropropane (78-87-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5	4
					Mass	g	< 2.04			4	1.02	4
2.16	1,3-dichloropropylene (542-75-6)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.17	Ethylbenzene (100-41-4)	Yes	Yes	No	Concentration	µg/L	1 U			4	3.33	4
					Mass	g	< 2.04			4	6.81	4
2.18	Methyl bromide (74-83-9)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.19	Methyl chloride (74-87-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.20	Methylene chloride (75-09-2)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.21	1,1,2,2- tetrachloroethane (79-34-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.22	Tetrachloroethylene (127-18-4)	Yes	Yes	No	Concentration	µg/L	0.97 J			4	300	4
					Mass	g	1.98			4	613.17	4
2.23	Toluene (108-88-3)	Yes	Yes	No	Concentration	µg/L	1 U			4	2.45	4
					Mass	g	< 2.04			4	5.01	4
2.24	1,2-trans-dichloroethylene (156-60-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.61	4
					Mass	g	< 2.04			4	1.25	4
2.25	1,1,1-trichloroethane (71-55-6)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.26	1,1,2-trichloroethane (79-00-5)	Yes	Yes	No	Concentration	µg/L	0.43 J			4	0.5 U	4
					Mass	g	0.88			4	< 1.02	4
2.27	Trichloroethylene (79-01-6)	Yes	Yes	No	Concentration	µg/L	0.21 J			4	44.5	4
					Mass	g	0.43			4	90.95	4
2.28	Vinyl chloride (75-01-4)	Yes	Yes	No	Concentration	µg/L	1 U			4	7.3	4
					Mass	g	< 2.04			4	14.92	4

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))1

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence		Units (specify)		Effluent				Intake (optional)	
			Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
Section 3. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)												
3.1	2-chlorophenol (95-57-8)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
3.2	2,4-dichlorophenol (120-83-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
3.3	2,4-dimethylphenol (105-67-9)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
3.4	4,6-dinitro-o-cresol (534-52-1)	No	No	Yes	Concentration	µg/L	20 U			4	6.75 U	4
					Mass	g	< 40.88			4	< 13.8	4
3.5	2,4-dinitrophenol (51-28-5)	No	No	Yes	Concentration	µg/L	20 U			4	6.75 U	4
					Mass	g	< 40.88			4	< 13.8	4
3.6	2-nitrophenol (88-75-5)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
3.7	4-nitrophenol (100-02-7)	No	No	Yes	Concentration	µg/L	20 U			4	4.65 U	4
					Mass	g	< 40.88			4	< 9.5	4
3.8	p-chloro-m-cresol (59-50-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
3.9	Pentachlorophenol (87-86-5)	No	No	Yes	Concentration	µg/L	20 U			4	4.65 U	4
					Mass	g	< 40.88			4	< 9.5	4
3.10	Phenol (108-95-2)	Yes	Yes	No	Concentration	µg/L	10 U			4	1.83	4
					Mass	g	< 20.44			4	3.74	4
3.11	2,4,6-trichlorophenol (88-05-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
Section 4. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)												
4.1	Acenaphthene (83-32-9)	No	No	Yes	Concentration	µg/L	10 U			4	2.42	4
					Mass	g	< 20.44			4	4.95	4
4.2	Acenaphthylene (208-96-8)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.3	Anthracene (120-12-7)	No	No	Yes	Concentration	µg/L	10 U			4	2.96	4
					Mass	g	< 20.44			4	6.05	4
4.4	Benzidine (92-87-5)	No	No	Yes	Concentration	µg/L	61 UT			4	27 U	4
					Mass	g	< 124.68			4	< 55.19	4
4.5	Benzo (a) anthracene (56-55-3)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.28 U	4
					Mass	g	< 10.42			4	< 4.66	4
4.6	Benzo (a) pyrene (50-32-8)	No	No	Yes	Concentration	µg/L	5.1 U			4	1.71	4
					Mass	g	< 10.42			4	3.50	4
4.7	3,4-benzofluoranthene (205-99-2)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.4 U	4
					Mass	g	< 10.42			4	< 4.91	4
4.8	Benzo (ghi) perylene (191-24-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.9	Benzo (k) fluoranthene (207-08-9)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.28 U	4
					Mass	g	< 10.42			4	< 4.66	4
4.10	Bis (2-chloroethoxy) methane (111-91-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.11	Bis (2-chloroethyl) ether (111-44-4)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.28 U	4
					Mass	g	< 10.42			4	< 4.66	4
4.12	Bis (2-chloroisopropyl) ether (102-80-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.13	Bis (2-ethylhexyl) phthalate (117-81-7)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.4 U	4
					Mass	g	< 10.42			4	< 4.91	4
4.14	4-bromophenyl phenyl ether (101-55-3)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.15	Butyl benzyl phthalate (85-68-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.16	2-chloronaphthalene (91-58-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.17	4-chlorophenyl phenyl ether (7005-72-3)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.18	Chrysene (218-01-9)	No	No	Yes	Concentration	µg/L	5.1 U			4	1.82	4
					Mass	g	< 10.42			4	3.72	4
4.19	Dibenzo (a,h) anthracene (53-70-3)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.28 U	4
					Mass	g	< 10.42			4	< 4.66	4
4.20	1,2-dichlorobenzene (95-50-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.21	1,3-dichlorobenzene (541-73-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.22	1,4-dichlorobenzene (106-46-7)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.23	3,3-dichlorobenzidine (91-94-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.24	Diethyl phthalate (84-66-2)	Yes	Yes	No	Concentration	µg/L	0.56 J			4	3.4 U	4
					Mass	g	1.14			4	< 6.95	4
4.25	Dimethyl phthalate (131-11-3)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.26	Di-n-butyl phthalate (84-74-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.27	2,4-dinitrotoluene (121-14-2)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.4 U	4
					Mass	g	< 10.42			4	< 4.91	4
4.28	2,6-dinitrotoluene (606-20-2)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.4 U	4
					Mass	g	< 10.42			4	< 4.91	4
4.29	Di-n-octyl phthalate (117-84-0)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.30	1,2-Diphenylhydrazine (as azobenzene) (122-66-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.31	Fluoranthene (206-44-0)	No	No	Yes	Concentration	µg/L	10 U			4	2.26	4
					Mass	g	< 20.44			4	4.62	4

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))1

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence		Units (specify)		Effluent				Intake (optional)	
			Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.32	Fluorene (86-73-7)	No	No	Yes	Concentration	µg/L	10 U			4	2.78	4
					Mass	g	< 20.44			4	5.68	4
4.33	Hexachlorobenzene (118-74-1)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.28 U	4
					Mass	g	< 10.42			4	< 4.66	4
4.34	Hexachlorobutadiene (87-68-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.35	Hexachlorocyclopentadiene (77-47-4)	No	No	Yes	Concentration	µg/L	15 U			4	7.75 U	4
					Mass	g	< 30.66			4	< 15.84	4
4.36	Hexachloroethane (67-72-1)	No	No	Yes	Concentration	µg/L	2 U			4	1.1 U	4
					Mass	g	< 4.09			4	< 2.25	4
4.37	Indeno (1,2,3-cd) pyrene (193-39-5)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.4 U	4
					Mass	g	< 10.42			4	< 4.91	4
4.38	Isophorone (78-59-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.39	Naphthalene (91-20-3)	Yes	Yes	No	Concentration	µg/L	2 U			4	2.96	4
					Mass	g	< 4.09			4	6.05	4
4.40	Nitrobenzene (98-95-3)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.4 U	4
					Mass	g	< 10.42			4	< 4.91	4
4.41	N-nitrosodimethylamine (62-75-9)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.42	N-nitrosodi-n-propylamine (621-64-7)	No	No	Yes	Concentration	µg/L	5.1 U			4	2.28 U	4
					Mass	g	< 10.42			4	< 4.66	4
4.43	N-nitrosodiphenylamine (86-30-6)	No	No	Yes	Concentration	µg/L	10 U			4	3.4 U	4
					Mass	g	< 20.44			4	< 6.95	4
4.44	Phenanthrene (85-01-8)	No	No	Yes	Concentration	µg/L	10 U			4	3.83	4
					Mass	g	< 20.44			4	7.83	4
4.45	Pyrene (129-00-0)	Yes	Yes	No	Concentration	µg/L	0.65 J			4	2.57	4
					Mass	g	1.33			4	5.25	4
4.46	1,2,4-trichlorobenzene (120-82-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
Section 5. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)												
5.1	Aldrin (309-00-2)	No	No	Yes	Concentration	µg/L	0.02 U			2	0.01 U	2
					Mass	g	< 0.04			2	< 0.02	2
5.2	α-BHC (319-84-6)	No	No	Yes	Concentration	µg/L	0.048 U			2	0.01 U	2
					Mass	g	< 0.1			2	< 0.02	2
5.3	β-BHC (319-85-7)	No	No	Yes	Concentration	µg/L	0.16 U			2	0.04 U	2
					Mass	g	< 0.33			2	< 0.08	2
5.4	γ-BHC (58-89-9)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.5	δ-BHC (319-86-8)	No	No	Yes	Concentration	µg/L	0.048 U			2	0.01 U	2
					Mass	g	< 0.1			2	< 0.02	2
5.6	Chlordane (57-74-9)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.7	4,4'-DDT (50-29-3)	No	No	Yes	Concentration	µg/L	0.032 U			2	0.01 U	2
					Mass	g	< 0.07			2	< 0.02	2
5.8	4,4'-DDE (72-55-9)	No	No	Yes	Concentration	µg/L	0.065 U			2	0.02 U	2
					Mass	g	< 0.13			2	< 0.04	2
5.9	4,4'-DDD (72-54-8)	No	No	Yes	Concentration	µg/L	0.04 U			2	0.13	2
					Mass	g	< 0.08			2	0.27	2
5.10	Dieldrin (60-57-1)	No	No	Yes	Concentration	µg/L	0.032 U			2	0.01 U	2
					Mass	g	< 0.07			2	< 0.02	2
5.11	α-endosulfan (115-29-7)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.12	β-endosulfan (115-29-7)	No	No	Yes	Concentration	µg/L	0.032 U			2	0.01 U	2
					Mass	g	< 0.07			2	< 0.02	2
5.13	Endosulfan sulfate (1031-07-8)	No	No	Yes	Concentration	µg/L	0.032 U			2	0.01 U	2
					Mass	g	< 0.07			2	< 0.02	2
5.14	Endrin (72-20-8)	No	No	Yes	Concentration	µg/L	0.16 U			2	0.04 U	2
					Mass	g	< 0.33			2	< 0.08	2
5.15	Endrin aldehyde (7421-93-4)	No	No	Yes	Concentration	µg/L	0.032 U			2	0.01 U	2
					Mass	g	< 0.07			2	< 0.02	2
5.16	Heptachlor (76-44-8)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.17	Heptachlor epoxide (1024-57-3)	No	No	Yes	Concentration	µg/L	0.16 U			2	0.04 U	2
					Mass	g	< 0.33			2	< 0.08	2
5.18	PCB-1242 (53469-21-9)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.19	PCB-1254 (11097-69-1)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.20	PCB-1221 (11104-28-2)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.21	PCB-1232 (11141-16-5)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.22	PCB-1248 (12672-29-6)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.23	PCB-1260 (11096-82-5)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.24	PCB-1016 (12674-11-2)	No	No	Yes	Concentration	µg/L	0.81 U			1	0.31 U	1
					Mass	g	< 1.66			1	< 0.63	1
5.25	Toxaphene (8001-35-2)	No	No	Yes	Concentration	µg/L	1.6 U			2	0.43 U	2
					Mass	g	< 3.27			2	< 0.88	2

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

2 Analysis for Total Recoverable Mercury must be performed utilizing the low-level, USEPA Method 1631E.

Additional Notes:

U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.

J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

T Indicates that a quality control parameter has exceeded laboratory limits.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

For analytes with both detections and non-detection results, the intake average was calculated using the average of the detection values and, for non-detections, half of the Reporting Limit.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))1

	Pollutant/Parameter (and CAS Number, if available)	Presence or Absence		Units (specify)		Effluent				Intake (Optional)	
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
	Check here if you believe all pollutants on Table C to be ***present*** in your discharge from the noted outfall. You need *not* check the "Believed Present" box for each pollutant.										
	Check here if you believe all pollutants on Table C to be ***absent*** in your discharge from the noted outfall. You need *not* check the "Believed Absent" box for each pollutant.										
1.	Bromide (24959-67-9)	No	Yes	Concentration							
				Mass							
2.	Chlorine, total residual	No	Yes	Concentration							
				Mass							
3.	Color	No	Yes	Concentration							
				Mass							
4.	Fecal coliform	No	Yes	Concentration							
				Mass							
5.	Fluoride (16984-48-8)	No	Yes	Concentration							
				Mass							
6	Nitrate-nitrite	Yes	No	Concentration	µg/L	1,200			1	210	1
				Mass	g	2,453			1	429	1
7.	Nitrogen, total organic (as N)	Yes	No	Concentration	µg/L	1,900			4	1,500	4
				Mass	g	3,883			4	3,066	4
8.	Oil and grease	Yes	No	Concentration	µg/L	2000 J			4	2,775	4
				Mass	g	4,088			4	5,672	4
9.	Phosphorus (as P), total (7723-14-0)	Yes	No	Concentration	µg/L	250			1	140	1
				Mass	g	511			1	286	1
10.	Sulfate (as SO4) (14808-79-8)	Yes	No	Concentration	µg/L	190,000			4	195,000	4
				Mass	g	388,341			4	398,561	4
11.	Sulfide (as S)	No	Yes	Concentration							
				Mass							
12.	Sulfite (as SO3) (14265-45-3)	No	Yes	Concentration							
				Mass							
13.	Surfactants	No	Yes	Concentration							
				Mass							
14.	Aluminum, total (7429-90-5)	Yes	No	Concentration	µg/L	16 J			4	15.63 U	4
				Mass	g	32.70			4	< 31.95	4
15.	Barium, total (7440-39-3)	Yes	No	Concentration	µg/L	320			4	315	4
				Mass	g	654			4	644	4
16.	Boron, total (7440-42-8)	No	Yes	Concentration							
				Mass							
17.	Cobalt, total (7440-48-4)	Yes	No	Concentration	µg/L	1.4 J			4	2	4
				Mass	g	2.86			4	3	4
18.	Iron, total (7439-89-6)	Yes	No	Concentration	µg/L	950			4	4,325	4
				Mass	g	1,942			4	8,840	4
19.	Magnesium, total (7439-95-4)	Yes	No	Concentration	µg/L	92,000			4	87,500	4
				Mass	g	188,039			4	178,841	4
20.	Molybdenum, total (7439-98-7)	No	Yes	Concentration							
				Mass							
21.	Manganese, total (7439-96-5)	Yes	No	Concentration	µg/L	2800 T			4	2,550	4
				Mass	g	5,723			4	5,212	4
22.	Tin, total (7440-31-5)	No	Yes	Concentration							
				Mass							
23.	Titanium, total (7440-32-6)	No	Yes	Concentration							
				Mass							
24.	**Radioactivity**										
	Alpha, total	No	Yes	Concentration							
				Mass							
	Beta, total	No	Yes	Concentration							
				Mass							
	Radium, total	No	Yes	Concentration							
				Mass							
	Radium 226, total	No	Yes	Concentration							
				Mass							

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Additional Notes:

U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.

J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

T Indicates that a quality control parameter has exceeded laboratory limits.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

For analytes with both detections and non-detection results, the intake average was calculated using the average of the detection values and, for non-detections, half of the Reporting Limit.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))1

	Pollutant	Presence or Absence		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)		
1.	Asbestos	No	Yes		
2.	Acetaldehyde	No	Yes		
3.	Allyl alcohol	No	Yes		
4.	Allyl chloride	No	Yes		
5.	Amyl acetate	No	Yes		
6.	Aniline	No	Yes		
7.	Benzonitrile	No	Yes		
8.	Benzyl chloride	No	Yes		
9.	Butyl acetate	No	Yes		
10.	Butylamine	No	Yes		
11.	Captan	No	Yes		
12.	Carbaryl	No	Yes		
13.	Carbofuran	No	Yes		
14.	Carbon disulfide	No	Yes		
15.	Chlorpyrifos	No	Yes		
16.	Coumaphos	No	Yes		
17.	Cresol	No	Yes		
18.	Crotonaldehyde	No	Yes		
19.	Cyclohexane	No	Yes	Not present in effluent samples, present in influent	Influent (avg) = 43.25 ug/L
20.	2,4-D (2,4-dichlorophenoxyacetic acid)	No	Yes		
21.	Diazinon	No	Yes		
22.	Dicamba	No	Yes		
23.	Dichlobenil	No	Yes		
24.	Dichlone	No	Yes		
25.	2,2-dichloropropionic acid	No	Yes		
26.	Dichlorvos	No	Yes		
27.	Diethyl amine	No	Yes		
28.	Dimethyl amine	No	Yes		
29.	Dintrobenzene	No	Yes		
30.	Diquat	No	Yes		
31.	Disulfoton	No	Yes		
32.	Diuron	No	Yes		
33.	Epichlorohydrin	No	Yes		
34.	Ethion	No	Yes		
35.	Ethylene diamine	No	Yes		
36.	Ethylene dibromide	No	Yes		
37.	Formaldehyde	No	Yes		
38.	Furfural	No	Yes		
39.	Guthion	No	Yes		
40.	Isoprene	No	Yes		
41.	Isopropanolamine	No	Yes		
42.	Kelthane	No	Yes		
43.	Kepone	No	Yes		
44.	Malathion	No	Yes		
45.	Mercaptodimethur	No	Yes		
46.	Methoxychlor	No	Yes		
47.	Methyl mercaptan	No	Yes		
48.	Methyl methacrylate	No	Yes		
49.	Methyl parathion	No	Yes		
50.	Mevinphos	No	Yes		
51.	Mexacarbate	No	Yes		
52.	Monoethyl amine	No	Yes		
53.	Monomethyl amine	No	Yes		
54.	Naled	No	Yes		
55.	Naphthenic acid	No	Yes		
56.	Nitrotoluene	No	Yes		
57.	Parathion	No	Yes		
58.	Phenolsulfonate	No	Yes		
59.	Phosgene	No	Yes		
60.	Propargite	No	Yes		
61.	Propylene oxide	No	Yes		
62.	Pyrethrins	No	Yes		
63.	Quinoline	No	Yes		
64.	Resorcinol	No	Yes		
65.	Strontium	No	Yes		
66.	Strychnine	No	Yes		
67.	Styrene	No	Yes		
68.	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	No	Yes		
69.	TDE (tetrachlorodiphenyl ethane)	No	Yes		
70.	2,4,5-TP [2-(2,4,5-trichlorophenoxy) propanoic	No	Yes		
71.	Trichlorofon	No	Yes		
72.	Triethanolamine	No	Yes		
73.	Triethylamine	No	Yes		
74.	Trimethylamine	No	Yes		
75.	Uranium	No	Yes		

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))1

	Pollutant	Presence or Absence		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)		
76.	Vanadium	Yes	No	Present in influent/effluent samples	Influent (avg) =1.7 ug/L, Effluent (max) = 0.5 J ug/L
77.	Vinyl acetate	No	Yes		
78.	Xylene	Yes	No	Not present in effluent samples, present in influent	Influent (avg) =23 ug/L
79.	Xylenol	No	Yes		
80.	Zirconium	No	Yes		

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Additional Notes:

J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	01A

TABLE E. 2,3,7,8 TETRACHLORODIBENZO P DIOXIN (2,3,7,8 TCDD) (40 CFR 122.21(g)(7)(viii))

Pollutant	TCDD Congeners Used or Manufactured	Presence or Absence		Results of Screening Procedure
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)	
2,3,7,8-TCDD	No	No	Yes	

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	Outfall #002

TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii)) 1

	Pollutant	Waiver Requested (input "Yes" when applicable)	Units (specify)		Effluent: Maximum Daily Discharge (required)	Effluent: Maximum Monthly Discharge (if available)	Effluent: Long-Term Average Daily Discharge (if available)	Effluent: Number of Analyses	Intake (Optional): Long-Term Average Value	Intake (Optional): Number of Analyses
	Mark "X" in Cell A6 if you have attached a request to NYSDEC for a waiver for *all* of the pollutants listed on this table for the noted outfall.									
Section 1.										
1.	Biochemical oxygen demand (BOD5)		Concentration	µg/L	2000 U			4	2050	4
			Mass	g	< 4088			4	4,190	4
2.	Chemical oxygen demand (COD)		Concentration	µg/L	92,000			4	32,000	4
			Mass	g	188,039			4	65,405	4
3.	Total organic carbon (TOC)		Concentration	µg/L	3,300			4	3,200	1
			Mass	g	6,745			4	6,540	1
4.	Total suspended solids (TSS)		Concentration	µg/L	3,300			4	9,950	4
			Mass	g	6,745			4	20,337	4
5.	Ammonia (as N)		Concentration	µg/L						
			Mass	g						
6.	Flow		Rate	GPM	383			4	329	4
7.	Temperature (winter)		°C	°C	15.45			4	16.07	4
	Temperature (summer)		°C	°C	16.79			4	17.67	4
8.	pH (minimum)		Standard units	SU	7.70			4	6.64	4
	pH (maximum)		Standard units	SU	7.88			4	7.47	4
9.	Mercury[2]		Concentration	µg/L	0.00072			3		
			Mass	g	0.00147			3		

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

2 Analysis for Mercury must be performed utilizing the low-level, USEPA Method 1631

Additional Notes:

Temperature and pH were measured at the time of sampling and during lab analysis. Values are representative of field data.

U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

For analytes with both detections and non-detection results, the intake average was calculated using the average of the detection values and, for non-detections, half of the Reporting Limit.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum	Outfall #002

TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii)) 1

	Pollutant	Waiver Requested (input "Yes" when applicable)	Units (specify)		Effluent: Maximum Daily Discharge (required)	Effluent: Maximum Monthly Discharge (if available)	Effluent: Long-Term Average Daily Discharge (if available)	Effluent: Number of Analyses	Intake (Optional): Long-Term Average Value	Intake (Optional): Number of Analyses
	Mark "X" in Cell A6 if you have attached a request to NYSDEC for a waiver for *all* of the pollutants listed on this table for the noted outfall.									
Section 2.[3]										
1.	Perfluorobutanoic acid (PFBA)		Concentration	ng/L	27			3		
2.	Perfluoropentanoic acid (PFPeA)		Concentration	ng/L	33			3		
3.	Perfluorohexanoic acid (PFHxA)		Concentration	ng/L	47			3		
4.	Perfluoroheptanoic acid (PFHpA)		Concentration	ng/L	54			3		
5.	Perfluorooctanoic acid (PFOA)		Concentration	ng/L	130			3		
6.	Perfluorononanoic acid (PFNA)		Concentration	ng/L	85			3		
7.	Perfluorodecanoic acid (PFDA)		Concentration	ng/L	5.2 I			3		
8.	Perfluoroundecanoic acid (PFUnA)		Concentration	ng/L	8.4			3		
9.	Perfluorododecanoic acid (PFDoA)		Concentration	ng/L	1.9 U			3		
10.	Perfluorotridecanoic acid (PFTriA)		Concentration	ng/L	1.9 U			3		
11.	Perfluorotetradecanoic acid (PFTeA)		Concentration	ng/L	1.9 U			3		
12.	Perfluorobutanesulfonic acid (PFBS)		Concentration	ng/L	6.7 I			3		
13.	Perfluoropentanesulfonic acid (PFPeS)		Concentration	ng/L	2.7			3		
14.	Perfluorohexanesulfonic acid (PFHxS)		Concentration	ng/L	11			3		
15.	Perfluoroheptanesulfonic Acid (PFHpS)		Concentration	ng/L	0.53 J			3		
16.	Perfluorooctanesulfonic acid (PFOS)		Concentration	ng/L	10			3		
17.	Perfluorononanesulfonic acid (PFNS)		Concentration	ng/L	1.9 U			3		
18.	Perfluorodecanesulfonic acid (PFDS)		Concentration	ng/L	1.9 U			3		
19.	Perfluorododecanesulfonic acid (PFDoS)		Concentration	ng/L	1.9 U			3		
20.	Perfluorooctanesulfonamide (FOSA)		Concentration	ng/L	1.9 U			3		
21.	NMeFOSAA		Concentration	ng/L	3.9 U			3		
22.	NEtFOSAA		Concentration	ng/L	0.79 J			3		
23.	4:2 FTS		Concentration	ng/L	7.8 U			3		
24.	6:2 FTS		Concentration	ng/L	7.8 U			3		
25.	8:2 FTS		Concentration	ng/L	7.8 U			3		
26.	NEtFOSA		Concentration	ng/L	1.9 U			3		
27.	NMeFOSA		Concentration	ng/L	1.9 U			3		
28.	NMeFOSE		Concentration	ng/L	19 U			3		
29.	NEtFOSE		Concentration	ng/L	19 U			3		
30.	9Cl-PF3ONS		Concentration	ng/L	7.8 U			3		
31.	HFPO-DA (GenX)		Concentration	ng/L	7.8 U			3		
32.	11Cl-PF3OUdS		Concentration	ng/L	7.8 U			3		
33.	ADONA		Concentration	ng/L	7.8 U			3		
34.	3:3 FTCA		Concentration	ng/L	2.6 JI			3		
35.	5:3 FTCA		Concentration	ng/L	48 U			3		
36.	7:3 FTCA		Concentration	ng/L	48 U			3		
37.	NFDHA		Concentration	ng/L	3.9 U			3		
38.	PFMBA		Concentration	ng/L	3.9 U			3		
39.	PFMPA		Concentration	ng/L	3.9 U			3		
40.	PFEESA		Concentration	ng/L	3.9 U			3		
Section 3.[4]										
1.	1,4-Dioxane		Concentration	µg/L	0.77			3		

3. Analysis for the PFAS suite of compounds must be performed utilizing USEPA's draft analytical Method 1633.

4. Analysis for 1,4-Dioxane must be performed utilizing USEPA Method 8270E SIM or 8270D SIM.

Additional Notes:

- U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.
- J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
- I Compound did not meet the ion ratio criteria.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	Outfall #002

TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))1

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence: Believed Present (Input "Yes" or "No" only)	Presence or Absence: Believed Absent (Input "Yes" or "No" only)	Units (specify)		Effluent: Maximum Daily Discharge (required)	Effluent: Maximum Monthly Discharge (if available)	Effluent: Long-Term Average Daily Discharge (if available)	Effluent: Number of Analyses	Intake (optional): Long- Term Average Value	Intake (optional): Number of Analyses
	Mark "X" in Cell A7 if you believe all pollutants on Table B to be absent in your discharge from the noted outfall. You need not check the "Believed Absent" box for each pollutant.											
Section 1. Toxic Metals, Cyanide, and Total Phenols												
1.1	Antimony, total (7440-36-0)	No	No	Yes	Concentration	µg/L	2 U			4	0.63 U	4
					Mass	g	< 4.09			4	< 1.29	4
1.2	Arsenic, total (7440-38-2)	Yes	Yes	No	Concentration	µg/L	1.9 J			4	3.80	4
					Mass	g	3.88			4	7.77	4
1.3	Beryllium, total (7440-41-7)	No	No	Yes	Concentration	µg/L	0.8 U			4	0.29 U	4
					Mass	g	< 1.64			4	< 0.59	4
1.4	Cadmium, total (7440-43-9)	No	No	Yes	Concentration	µg/L	2 U			4	0.44 U	4
					Mass	g	< 4.09			4	< 0.9	4
1.5	Chromium, total (7440-47-3)	Yes	Yes	No	Concentration	µg/L	2.70			4	1.25 U	4
					Mass	g	5.52			4	< 2.55	4
1.6	Copper, total (7440-50-8)	Yes	Yes	No	Concentration	µg/L	0.62 J			4	1.07	4
					Mass	g	1.27			4	2.19	4
1.7	Lead, total (7439-92-1)	No	No	Yes	Concentration	µg/L	1.2 U			4	0.34 U	4
					Mass	g	< 2.45			4	< 0.69	4
1.8	Mercury, total (7439-97-6)	No	No	Yes	Concentration	µg/L	0.00072			3		
					Mass	g	0.00147			3		
1.9	Nickel, total (7440-02-0)	Yes	Yes	No	Concentration	µg/L	4.80			4	3.83	4
					Mass	g	9.81			4	7.83	4
1.10	Selenium, total (7782-49-2)	Yes	Yes	No	Concentration	µg/L	1.70			4	1.50	4
					Mass	g	3.47			4	3.07	4
1.11	Silver, total (7440-22-4)	No	No	Yes	Concentration	µg/L	2 U			4	0.44 U	4
					Mass	g	< 4.09			4	< 0.9	4
1.12	Thallium, total (7440-28-0)	No	No	Yes	Concentration	µg/L	0.8 U			4	0.29 U	4
					Mass	g	< 1.64			4	< 0.59	4
1.13	Zinc, total (7440-66-6)	Yes	Yes	No	Concentration	µg/L	4.3 J			4	4.45	4
					Mass	g	8.79			4	9.10	4
1.14	Cyanide, total (57-12-5)	No	No	Yes	Concentration	µg/L						
					Mass	g						
1.15	Phenols, total	Yes	Yes	No	Concentration	µg/L	200 U			4	15.5	4
					Mass	g	< 408.78			4	31.7	4
Section 2. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)												
2.1	Acrolein (107-02-8)	No	No	Yes	Concentration	µg/L	10 U			3	5 U	3
					Mass	g	< 20.44			3	< 10.22	3
2.2	Acrylonitrile (107-13-1)	No	No	Yes	Concentration	µg/L	3 U			3	1.17 U	3
					Mass	g	< 6.13			3	< 2.39	3
2.3	Benzene (71-43-2)	Yes	Yes	No	Concentration	µg/L	1 U			4	260	4
					Mass	g	< 2.04			4	531	4
2.4	Bromoform (75-25-2)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.5	Carbon tetrachloride (56-23-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.6	Chlorobenzene (108-90-7)	No	No	Yes	Concentration	µg/L	1 U			4	0.67	4
					Mass	g	< 2.04			4	1.37	4
2.7	Chlorodibromomethane (124-48-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.8	Chloroethane (75-00-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.57	4
					Mass	g	< 2.04			4	1.17	4
2.9	2-chloroethylvinyl ether (110-75-8)	No	No	Yes	Concentration	µg/L	1 U			3	0.5 U	3
					Mass	g	< 2.04			3	< 1.02	3
2.10	Chloroform (67-66-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.11	Dichlorobromomethane (75-27-4)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.12	1,1-dichloroethane (75-34-3)	Yes	Yes	No	Concentration	µg/L	1 U			4	0.59	4
					Mass	g	< 2.04			4	1.21	4
2.13	1,2-dichloroethane (107-06-2)	Yes	Yes	No	Concentration	µg/L	1.2			4	8.38	4
					Mass	g	2.45			4	17.1	4
2.14	1,1-dichloroethylene (75-35-4)	No	No	Yes	Concentration	µg/L	1 U			4	0.98	4
					Mass	g	< 2.04			4	2.00	4
2.15	1,2-dichloropropane (78-87-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.16	1,3-dichloropropylene (542-75-6)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.17	Ethylbenzene (100-41-4)	Yes	Yes	No	Concentration	µg/L	1 U			4	15.25	4
					Mass	g	< 2.04			4	31.17	4
2.18	Methyl bromide (74-83-9)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.19	Methyl chloride (74-87-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.20	Methylene chloride (75-09-2)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.21	1,1,2,2- tetrachloroethane (79-34-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.22	Tetrachloroethylene (127-18-4)	Yes	Yes	No	Concentration	µg/L	1.4			4	228	4
					Mass	g	2.86			4	465	4
2.23	Toluene (108-88-3)	Yes	Yes	No	Concentration	µg/L	1 U			4	7.80	4
					Mass	g	< 2.04			4	15.9	4
2.24	1,2-trans-dichloroethylene (156-60-5)	No	No	Yes	Concentration	µg/L	1 U			4	1.70	4
					Mass	g	< 2.04			4	3.47	4
2.25	1,1,1-trichloroethane (71-55-6)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.26	1,1,2-trichloroethane (79-00-5)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
2.27	Trichloroethylene (79-01-6)	Yes	Yes	No	Concentration	µg/L	1.5			4	128	4
					Mass	g	3.07			4	261	4

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))1

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence		Units (specify)		Effluent				Intake (optional)	
			Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
2.28	Vinyl chloride (75-01-4)	Yes	Yes	No	Concentration	µg/L	1 U			4	6.9	4
					Mass	g	< 2.04			4	14	4
Section 3. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)												
3.1	2-chlorophenol (95-57-8)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
3.2	2,4-dichlorophenol (120-83-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
3.3	2,4-dimethylphenol (105-67-9)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
3.4	4,6-dinitro-o-cresol (534-52-1)	No	No	Yes	Concentration	µg/L	20 U			4	6.88 U	4
					Mass	g	< 40.88			4	< 14.06	4
3.5	2,4-dinitrophenol (51-28-5)	No	No	Yes	Concentration	µg/L	20 UT			4	6.88 U	4
					Mass	g	< 40.88			4	< 14.06	4
3.6	2-nitrophenol (88-75-5)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
3.7	4-nitrophenol (100-02-7)	No	No	Yes	Concentration	µg/L	20 U			4	4.66 U	4
					Mass	g	< 40.88			4	< 9.52	4
3.8	p-chloro-m-cresol (59-50-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
3.9	Pentachlorophenol (87-86-5)	No	No	Yes	Concentration	µg/L	20 U			4	4.66 U	4
					Mass	g	< 40.88			4	< 9.52	4
3.10	Phenol (108-95-2)	Yes	Yes	No	Concentration	µg/L	10 U			4	1.69	4
					Mass	g	< 20.44			4	3.45	4
3.11	2,4,6-trichlorophenol (88-05-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
Section 4. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)												
4.1	Acenaphthene (83-32-9)	No	No	Yes	Concentration	µg/L	10 U			4	1.51	4
					Mass	g	< 20.44			4	3.09	4
4.2	Acenaphthylene (208-96-8)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.3	Anthracene (120-12-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.4	Benzidine (92-87-5)	No	No	Yes	Concentration	µg/L	66 U			4	27 U	4
					Mass	g	< 134.9			4	< 55.19	4
4.5	Benzo (a) anthracene (56-55-3)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.29 U	4
					Mass	g	< 11.24			4	< 4.68	4
4.6	Benzo (a) pyrene (50-32-8)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.29 U	4
					Mass	g	< 11.24			4	< 4.68	4
4.7	3,4-benzofluoranthene (205-99-2)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.8	Benzo (ghi) perylene (191-24-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.9	Benzo (k) fluoranthene (207-08-9)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.29 U	4
					Mass	g	< 11.24			4	< 4.68	4
4.10	Bis (2-chloroethoxy) methane (111-91-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.11	Bis (2-chloroethyl) ether (111-44-4)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.29 U	4
					Mass	g	< 11.24			4	< 4.68	4
4.12	Bis (2-chloroisopropyl) ether (102-80-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.13	Bis (2-ethylhexyl) phthalate (117-81-7)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.14	4-bromophenyl phenyl ether (101-55-3)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.15	Butyl benzyl phthalate (85-68-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.16	2-chloronaphthalene (91-58-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.17	4-chlorophenyl phenyl ether (7005-72-3)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.18	Chrysene (218-01-9)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.19	Dibenzo (a,h) anthracene (53-70-3)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.29 U	4
					Mass	g	< 11.24			4	< 4.68	4
4.20	1,2-dichlorobenzene (95-50-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.41	4
					Mass	g	< 2.04			4	0.84	4
4.21	1,3-dichlorobenzene (541-73-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.22	1,4-dichlorobenzene (106-46-7)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.23	3,3-dichlorobenzidine (91-94-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.24	Diethyl phthalate (84-66-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.25	Dimethyl phthalate (131-11-3)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.26	Di-n-butyl phthalate (84-74-2)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.27	2,4-dinitrotoluene (121-14-2)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.28	2,6-dinitrotoluene (606-20-2)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.29	Di-n-octyl phthalate (117-84-0)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.30	1,2-Diphenylhydrazine (as azobenzene) (122-66-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.31	Fluoranthene (206-44-0)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))1

	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence		Units (specify)		Effluent				Intake (optional)	
			Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.32	Fluorene (86-73-7)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.33	Hexachlorobenzene (118-74-1)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.29 U	4
					Mass	g	< 11.24			4	< 4.68	4
4.34	Hexachlorobutadiene (87-68-3)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
4.35	Hexachlorocyclopentadiene (77-47-4)	No	No	Yes	Concentration	µg/L	17 U			4	7.75 U	4
					Mass	g	< 34.75			4	< 15.84	4
4.36	Hexachloroethane (67-72-1)	No	No	Yes	Concentration	µg/L	2.2 U			4	1.1 U	4
					Mass	g	< 4.5			4	< 2.25	4
4.37	Indeno (1,2,3-cd) pyrene (193-39-5)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.38	Isophorone (78-59-1)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.39	Naphthalene (91-20-3)	Yes	Yes	No	Concentration	µg/L	2.2 U			4	6.58	4
					Mass	g	< 4.5			4	13.4	4
4.40	Nitrobenzene (98-95-3)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.41	N-nitrosodimethylamine (62-75-9)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.42	N-nitrosodi-n-propylamine (621-64-7)	No	No	Yes	Concentration	µg/L	5.5 U			4	2.41 U	4
					Mass	g	< 11.24			4	< 4.93	4
4.43	N-nitrosodiphenylamine (86-30-6)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.44	Phenanthrene (85-01-8)	No	No	Yes	Concentration	µg/L	10 U			4	2.19	4
					Mass	g	< 20.44			4	4.48	4
4.45	Pyrene (129-00-0)	No	No	Yes	Concentration	µg/L	10 U			4	3.41 U	4
					Mass	g	< 20.44			4	< 6.97	4
4.46	1,2,4-trichlorobenzene (120-82-1)	No	No	Yes	Concentration	µg/L	1 U			4	0.5 U	4
					Mass	g	< 2.04			4	< 1.02	4
Section 5. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)												
5.1	Aldrin (309-00-2)	No	No	Yes	Concentration	µg/L	0.02 U			2	0.01 U	2
					Mass	g	< 0.04			2	< 0.02	2
5.2	α-BHC (319-84-6)	No	No	Yes	Concentration	µg/L	0.031 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.3	β-BHC (319-85-7)	No	No	Yes	Concentration	µg/L	0.1 U			2	0.04 U	2
					Mass	g	< 0.2			2	< 0.08	2
5.4	γ-BHC (58-89-9)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.5	δ-BHC (319-86-8)	No	No	Yes	Concentration	µg/L	0.031 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.6	Chlordane (57-74-9)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.7	4,4'-DDT (50-29-3)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.8	4,4'-DDE (72-55-9)	No	No	Yes	Concentration	µg/L	0.041 U			2	0.02 U	2
					Mass	g	< 0.08			2	< 0.04	2
5.9	4,4'-DDD (72-54-8)	No	No	Yes	Concentration	µg/L	0.04 U			2	0.02 U	2
					Mass	g	< 0.08			2	< 0.04	2
5.10	Dieldrin (60-57-1)	No	No	Yes	Concentration	µg/L	0.021 U			2	0.01 U	2
					Mass	g	< 0.04			2	< 0.02	2
5.11	α-endosulfan (115-29-7)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.12	β-endosulfan (115-29-7)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.13	Endosulfan sulfate (1031-07-8)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.14	Endrin (72-20-8)	No	No	Yes	Concentration	µg/L	0.1 U			2	0.04 U	2
					Mass	g	< 0.2			2	< 0.08	2
5.15	Endrin aldehyde (7421-93-4)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.16	Heptachlor (76-44-8)	No	No	Yes	Concentration	µg/L	0.03 U			2	0.01 U	2
					Mass	g	< 0.06			2	< 0.02	2
5.17	Heptachlor epoxide (1024-57-3)	No	No	Yes	Concentration	µg/L	0.1 U			2	0.04 U	2
					Mass	g	< 0.2			2	< 0.08	2
5.18	PCB-1242 (53469-21-9)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.19	PCB-1254 (11097-69-1)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.20	PCB-1221 (11104-28-2)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.21	PCB-1232 (11141-16-5)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.22	PCB-1248 (12672-29-6)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.23	PCB-1260 (11096-82-5)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.24	PCB-1016 (12674-11-2)	No	No	Yes	Concentration	µg/L	0.52 U			1	0.27 U	1
					Mass	g	< 1.06			1	< 0.55	1
5.25	Toxaphene (8001-35-2)	No	No	Yes	Concentration	µg/L	1 U			2	0.4 U	2
					Mass	g	< 2.04			2	< 0.82	2

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

2 Analysis for Total Recoverable Mercury must be performed utilizing the low-level, USEPA Method 1631E.

Additional Notes:

U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.

J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

T Indicates that a quality control parameter has exceeded laboratory limits.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

For analytes with both detections and non-detection results, the intake average was calculated using the average of the detection values and, for non-detections, half of the Reporting Limit.

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))1

	Pollutant/Parameter (and CAS Number, if available)	Presence or Absence		Units (specify)		Effluent				Intake (Optional)	
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
	Check here if you believe all pollutants on Table C to be ***present*** in your discharge from the noted outfall. You need *not* check the "Believed Present" box for each pollutant.										
	Check here if you believe all pollutants on Table C to be ***absent*** in your discharge from the noted outfall. You need *not* check the "Believed Absent" box for each pollutant.										
1.	Bromide (24959-67-9)	No	Yes	Concentration	µg/L						
				Mass	g						
2.	Chlorine, total residual	No	Yes	Concentration	µg/L						
				Mass	g						
3.	Color	No	Yes	Concentration	µg/L						
				Mass	g						
4.	Fecal coliform	No	Yes	Concentration	µg/L						
				Mass	g						
5.	Fluoride (16984-48-8)	No	Yes	Concentration	µg/L						
				Mass	g						
6	Nitrate-nitrite	Yes	No	Concentration	µg/L	960			1	1,000	1
				Mass	g	1962			1	2044	1
7.	Nitrogen, total organic (as N)	Yes	No	Concentration	µg/L	1,300			4	1,178	4
				Mass	g	2,657			4	2,407	4
8.	Oil and grease	Yes	No	Concentration	µg/L	2300 J			4	2,175	4
				Mass	g	4,701			4	4,445	4
9.	Phosphorus (as P), total (7723-14-0)	Yes	No	Concentration	µg/L	110			1	37.0	1
				Mass	g	225			1	75.6	1
10.	Sulfate (as SO4) (14808-79-8)	Yes	No	Concentration	µg/L	140,000			4	117,500	4
				Mass	g	286,146			4	240,158	4
11.	Sulfide (as S)	No	Yes	Concentration	µg/L						
				Mass	g						
12.	Sulfite (as SO3) (14265-45-3)	No	Yes	Concentration	µg/L						
				Mass	g						
13.	Surfactants	No	Yes	Concentration	µg/L						
				Mass	g						
14.	Aluminum, total (7429-90-5)	Yes	No	Concentration	µg/L	42			4	15.63 U	4
				Mass	g	86			4	< 31.95	4
15.	Barium, total (7440-39-3)	Yes	No	Concentration	µg/L	220			4	243	4
				Mass	g	450			4	496	4
16.	Boron, total (7440-42-8)	No	Yes	Concentration	µg/L						
				Mass	g						
17.	Cobalt, total (7440-48-4)	Yes	No	Concentration	µg/L	1.8			4	1.93	4
				Mass	g	3.68			4	3.94	4
18.	Iron, total (7439-89-6)	Yes	No	Concentration	µg/L	1,800			4	4,975	4
				Mass	g	3,679			4	10,168	4
19.	Magnesium, total (7439-95-4)	Yes	No	Concentration	µg/L	50,000			4	48,500	4
				Mass	g	102,195			4	99,129	4
20.	Molybdenum, total (7439-98-7)	No	Yes	Concentration	µg/L						
				Mass	g						
21.	Manganese, total (7439-96-5)	Yes	No	Concentration	µg/L	2,100			4	2,250	4
				Mass	g	4,292			4	4,599	4
22.	Tin, total (7440-31-5)	No	Yes	Concentration	µg/L						
				Mass	g						
23.	Titanium, total (7440-32-6)	No	Yes	Concentration	µg/L						
				Mass	g						
24.	**Radioactivity**										
	Alpha, total	No	Yes	Concentration							
				Mass							
	Beta, total	No	Yes	Concentration							
				Mass							
	Radium, total	No	Yes	Concentration							
				Mass							
	Radium 226, total	No	Yes	Concentration							
				Mass							

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

Additional Notes:

U Compound was analyzed for but not detected. The value shown with the "U" qualifier is the laboratory Reporting Limit.

J Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

For analytes with both detections and non-detection results, the maximum daily discharge was calculated using the maximum of the detection values.

For analytes with both detections and non-detection results, the intake average was calculated using the average of the detection values and, for non-detections, half of the Reporting Limit.

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))1

	Pollutant	Presence or Absence		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)		
1.	Asbestos	No	Yes		
2.	Acetaldehyde	No	Yes		
3.	Allyl alcohol	No	Yes		
4.	Allyl chloride	No	Yes		
5.	Amyl acetate	No	Yes		
6.	Aniline	No	Yes		
7.	Benzonitrile	No	Yes		
8.	Benzyl chloride	No	Yes		
9.	Butyl acetate	No	Yes		
10.	Butylamine	No	Yes		
11.	Captan	No	Yes		
12.	Carbaryl	No	Yes		
13.	Carbofuran	No	Yes		
14.	Carbon disulfide	No	Yes		
15.	Chlorpyrifos	No	Yes		
16.	Coumaphos	No	Yes		
17.	Cresol	No	Yes		
18.	Crotonaldehyde	No	Yes		
19.	Cyclohexane	No	Yes	Not present in effluent samples, present in influent	Influent (avg) = 64.5 ug/L
20.	2,4-D (2,4-dichlorophenoxyacetic acid)	No	Yes		
21.	Diazinon	No	Yes		
22.	Dicamba	No	Yes		
23.	Dichlobenil	No	Yes		
24.	Dichlone	No	Yes		
25.	2,2-dichloropropionic acid	No	Yes		
26.	Dichlorvos	No	Yes		
27.	Diethyl amine	No	Yes		
28.	Dimethyl amine	No	Yes		
29.	Dintrobenzene	No	Yes		
30.	Diquat	No	Yes		
31.	Disulfoton	No	Yes		
32.	Diuron	No	Yes		
33.	Epichlorohydrin	No	Yes		
34.	Ethion	No	Yes		
35.	Ethylene diamine	No	Yes		
36.	Ethylene dibromide	No	Yes		
37.	Formaldehyde	No	Yes		
38.	Furfural	No	Yes		
39.	Guthion	No	Yes		
40.	Isoprene	No	Yes		
41.	Isopropanolamine	No	Yes		
42.	Kelthane	No	Yes		
43.	Kepone	No	Yes		
44.	Malathion	No	Yes		
45.	Mercaptodimethur	No	Yes		
46.	Methoxychlor	No	Yes		
47.	Methyl mercaptan	No	Yes		
48.	Methyl methacrylate	No	Yes		
49.	Methyl parathion	No	Yes		
50.	Mevinphos	No	Yes		
51.	Mexacarbate	No	Yes		
52.	Monoethyl amine	No	Yes		
53.	Monomethyl amine	No	Yes		
54.	Naled	No	Yes		
55.	Naphthenic acid	No	Yes		
56.	Nitrotoluene	No	Yes		
57.	Parathion	No	Yes		
58.	Phenolsulfonate	No	Yes		
59.	Phosgene	No	Yes		
60.	Propargite	No	Yes		
61.	Propylene oxide	No	Yes		
62.	Pyrethrins	No	Yes		
63.	Quinoline	No	Yes		
64.	Resorcinol	No	Yes		
65.	Strontium	No	Yes		
66.	Strychnine	No	Yes		
67.	Styrene	No	Yes		
68.	2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	No	Yes		
69.	TDE (tetrachlorodiphenyl ethane)	No	Yes		
70.	2,4,5-TP [2-(2,4,5-trichlorophenoxy) propanoic	No	Yes		
71.	Trichlorofon	No	Yes		
72.	Triethanolamine	No	Yes		
73.	Triethylamine	No	Yes		
74.	Trimethylamine	No	Yes		
75.	Uranium	No	Yes		

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))1

	Pollutant	Presence or Absence		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)		
76.	Vanadium	No	Yes		
77.	Vinyl acetate	No	Yes		
78.	Xylene	Yes	No	Not present in effluent samples, present in influent	Influent (avg): 69.75 ug/L
79.	Xylenol	No	Yes		
80.	Zirconium	No	Yes		

1 Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

DEC Identification Number	SPDES Permit Number	Facility Name	Outfall Number
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint Petroleum Remediation Project	Outfall #002

TABLE E. 2,3,7,8 TETRACHLORODIBENZO P DIOXIN (2,3,7,8 TCDD) (40 CFR 122.21(g)(7)(viii))

Pollutant	TCDD Congeners Used or Manufactured	Presence or Absence		Results of Screening Procedure
		Believed Present (Input "Yes" or "No" only)	Believed Absent (Input "Yes" or "No" only)	
2,3,7,8-TCDD	No	No	Yes	

TABLE F. WATER TREATMENT CHEMICAL LISTING

WTC Trade Name	Manufacturer	WTC Function	Authorized Dosage (lbs/d)		Discharge Outfall	Authorized Date	New or Increase Request (optional)
			Average	Maximum			
For all New or Increased WTCs, you must attach a completed WTC Request Form			☐ No new or increased WTC requests included as part of this application.				
Redux E50	Redux Technolog	Coagulant	18.00	48.00	002		☐New ☑Increase
Redux P-853	Redux Technolog	Flocculant	1.44	3.84	002		☐New ☑Increase
Redux 375	Redux Technolog	Minimize equipment fouling	180.00	216.00	002		☐New ☑Increase
							☐New ☐Increase
							☐New ☐Increase
							☐New ☐Increase
							☐New ☐Increase
							☐New ☐Increase
							☐New ☐Increase
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							☐New ☐Increase
							☐New ☐Increase
							☐New ☐Increase
							☐New ☐Increase

DEC Identification Number	SPDES Permit Number	Facility Name
2-6101-00107-0026	NY 0267724	ExxonMobil Greenpoint

Form Approved: 5/12/2023

TABLE G. INDUSTRIAL CHEMICAL SURVEY

Complete this table for all substances that have been used, produced, stored, distributed or otherwise disposed of in significant quantity AND for any quantity of BCCs, chemicals for which FDA fish flesh limits exist, or restricted pesticide products listed in Part 326, Section 2 of the ECL. Restricted pesticides also include those products whose labeling bears the statement "Restricted Use Pesticide." Do not include chemicals that are present as *de minimus* concentrations as listed in the SDS for that substance.

For any substance listed that is used in a manner which could cause them to come into contact with a wastewater that is ultimately discharged to the waters of the State through an outfall controlled by this permit application, identify it as "Present" and the Outfall(s) by which it may be discharged. Sampling results for these pollutants should also be included with Tables B-E.

☐ A separate, but equivalent table has been attached as part of this application.

Substance Name	CAS Number	Purpose of Use Code	Average Annual Usage	Amount On Hand	Presence in Discharge	Discharge Outfall
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	
		PRO - Produced	Gal	Gal	☐Present ☐Not Present	

TABLE H. FACILITY & COLLECTION SYSTEM RESILIENCY

Pump Station Name	PS Owner	General Location	Latitude (DMS)	Longitude (DMS)	Floor Elevation (ft, NAVD88)
Complete this table for all pump stations that exist at the wastewater treatment facility and within the collection system. Identify the name of the pump station, the owner of the pump station (if different than the SPDES permittee), the general location of the pump station (e.g. intersection of Green St. & Water St.), the latitude and longitude of the pump station in degrees-minutes-seconds (DMS) format, and the elevation in feet of the pump station floor (per the NAVD88 datum).					
☑ The wastewater treatment facility and collection system do not contain any pump stations.					
			° ' "	° ' "	
			° ' "	° ' "	
			° ' "	° ' "	
			° ' "	° ' "	
			° ' "	° ' "	
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			° ' "	° ' "	
			° ' "	° ' "	
			° ' "	° ' "	
			° ' "	° ' "	

Attachment C

Supplemental Sampling Reports
(PFAS, 1,4-Dioxane, Total Organic Carbon, and Mercury)
Eurofins Environmental Labs Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Matthew Mueller
Roux Environmental Eng & Geology DPC
209 Shafter St
Islandia, New York 11749

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JOB DESCRIPTION

EMGPRP

JOB NUMBER

410-152590-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

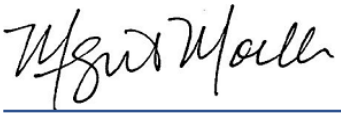
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Revision 1

Authorized for release by
Megan Moeller, Client Services Manager
Megan.Moeller@et.eurofinsus.com
(717)556-7261

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

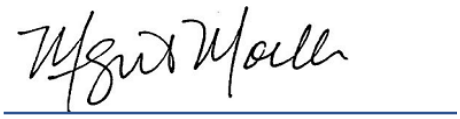

Table of Contents

Definitions/Glossary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
I	Value is EMPC (estimated maximum possible concentration).
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: 410-152590-1 — Eurofins Lancaster Laboratories Environment

Job Narrative
410-152590-1

REVISION

The report being provided is a revision of the original report sent on 12/13/2023. The report (revision 1) is being revised due to add a comment regarding the meaning of the I qualifier for PFAS analysis.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/28/2023 8:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7°C and 3.4°C

Receipt Exceptions
Backup volume for 1633 method was placed in freezer on 11/28/2023.

For the PFAS analysis 410-152590, the I qualifier on the report is used to identify compounds which did not meet the ion ratio criteria.

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

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

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

Detection Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001 — Lab Sample ID: 410-152590-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.46		0.30	0.10	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	12		7.3	1.8	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	29		3.6	0.91	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	40	I	1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	24		1.8	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	120		1.8	0.58	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	9.4		1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	1.3	J	1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	33	I	1.8	0.27	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	2.0		1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	8.0		1.8	0.52	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	9.2		1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	29		7.3	2.3	ng/L	1		Draft-4 1633	Total/NA
NEtFOSAA	0.87	J	1.8	0.64	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.1	J I	9.1	1.4	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	60		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	6900		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	6800		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	6900		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	7000		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	7000		1000	500	ug/L	1		9060A	Total/NA

Client Sample ID: Outfall-002 — Lab Sample ID: 410-152590-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.58		0.31	0.10	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	27		7.8	1.9	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	31		3.9	0.97	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	44		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	54		1.9	0.50	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	130		1.9	0.62	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	81		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	4.4		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluoroundecanoic acid	7.9		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	5.3		1.9	0.29	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	1.8	J	1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	9.4		1.9	0.55	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanesulfonic acid	0.45	J	1.9	0.39	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	9.4		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.6	J I	9.7	1.5	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	60		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	3200		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	3400		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	3400		1000	500	ug/L	1		9060A	Total/NA

Client Sample ID: Outfall-01A — Lab Sample ID: 410-152590-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.43		0.31	0.10	ug/L	1		8270E SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Outfall-01A (Continued)
Lab Sample ID: 410-152590-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	11		7.6	1.9	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	27		3.8	0.96	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	40	I	1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	26		1.9	0.50	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	110		1.9	0.61	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	9.2		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	1.1	J	1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	35	I	1.9	0.29	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	3.0	I	1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	8.6		1.9	0.55	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	9.2		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	29		7.6	2.4	ng/L	1		Draft-4 1633	Total/NA
NEtFOSAA	0.92	J	1.9	0.67	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.1	J	9.6	1.4	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid - DL	29	J	38	9.6	ng/L	10		Draft-4 1633	Total/NA
Perfluorohexanoic acid - DL	27		19	4.8	ng/L	10		Draft-4 1633	Total/NA
Perfluoroheptanoic acid - DL	20		19	5.0	ng/L	10		Draft-4 1633	Total/NA
Perfluorooctanoic acid - DL	76		19	6.1	ng/L	10		Draft-4 1633	Total/NA
Perfluorononanoic acid - DL	8.2	J	19	4.8	ng/L	10		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid - DL	43	I	19	2.9	ng/L	10		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid - DL	8.0	J	19	5.5	ng/L	10		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid - DL	11	J	19	4.8	ng/L	10		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2) - DL	25	J	76	24	ng/L	10		Draft-4 1633	Total/NA
Total Suspended Solids	90		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	6700		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	6300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	6500		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	6900		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	7100		1000	500	ug/L	1		9060A	Total/NA

Client Sample ID: Outfall-001
Lab Sample ID: 410-152590-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.43		0.30	0.10	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	9.8		7.3	1.8	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	29		3.6	0.91	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	41	I	1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	26		1.8	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	110	I	1.8	0.58	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	8.6		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	1.4	J	1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluoroundecanoic acid	0.76	J	1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	37	I	1.8	0.27	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	1.7	J	1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	8.7		1.8	0.52	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	8.5		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	32		7.3	2.3	ng/L	1		Draft-4 1633	Total/NA
NEtFOSAA	0.65	J	1.8	0.64	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	1.6	J I	9.1	1.4	ng/L	1		Draft-4 1633	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Outfall-001 (Continued)
Lab Sample ID: 410-152590-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	60		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	6500		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	6300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	6400		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	6600		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	6800		1000	500	ug/L	1		9060A	Total/NA

Client Sample ID: Outfall-002
Lab Sample ID: 410-152590-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.66		0.30	0.10	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	27		7.6	1.9	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	31		3.8	0.95	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	46		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	52		1.9	0.50	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	120		1.9	0.61	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	78		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	5.2	I	1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluoroundecanoic acid	8.4		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	6.7	I	1.9	0.29	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	2.7		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	9.8		1.9	0.54	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanesulfonic acid	0.53	J	1.9	0.38	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	10		1.9	0.48	ng/L	1		Draft-4 1633	Total/NA
NEtFOSAA	0.79	J	1.9	0.67	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.1	J I	9.5	1.4	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	60		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	3100		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	3400		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	3500		1000	500	ug/L	1		9060A	Total/NA

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152590-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.45		0.31	0.10	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	13		7.8	2.0	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	28		3.9	0.98	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	39	I	2.0	0.49	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	25		2.0	0.51	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	120	I	2.0	0.63	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	8.4	I	2.0	0.49	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	1.2	J I	2.0	0.49	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	47	I	2.0	0.29	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	2.0		2.0	0.49	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	8.1		2.0	0.56	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	9.6		2.0	0.49	ng/L	1		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	30		7.8	2.4	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.3	J	9.8	1.5	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	30		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Outfall-01A (Continued)
Lab Sample ID: 410-152590-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	6600		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	6200		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	6500		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	6800		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	6900		1000	500	ug/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Outfall-001
Date Collected: 11/27/23 12:10
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-1
Matrix: Groundwater

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.46**		0.30	0.10	ug/L		12/02/23 07:54	12/04/23 09:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*93*		*17 - 120*	*12/02/23 07:54*	*12/04/23 09:36*	*1*
Fluoranthene-d10 (Surr)	*87*		*43 - 124*	*12/02/23 07:54*	*12/04/23 09:36*	*1*
1-Methylnaphthalene-d10 (Surr)	*113*		*33 - 120*	*12/02/23 07:54*	*12/04/23 09:36*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**12**		7.3	1.8	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoropentanoic acid	**29**		3.6	0.91	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorohexanoic acid	**40**	**I**	1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoroheptanoic acid	**24**		1.8	0.47	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorooctanoic acid	**120**		1.8	0.58	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorononanoic acid	**9.4**		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorodecanoic acid	**1.3**	**J**	1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoroundecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorododecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorotridecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorotetradecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorobutanesulfonic acid	**33**	**I**	1.8	0.27	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoropentanesulfonic acid	**2.0**		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorohexanesulfonic acid	**8.0**		1.8	0.52	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoroheptanesulfonic acid	ND		1.8	0.36	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorooctanesulfonic acid	**9.2**		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorononanesulfonic acid	ND		1.8	0.36	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorodecanesulfonic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8	0.82	ng/L		12/01/23 15:25	12/08/23 12:26	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.3	1.5	ng/L		12/01/23 15:25	12/08/23 12:26	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	**29**		7.3	2.3	ng/L		12/01/23 15:25	12/08/23 12:26	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.3	2.4	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluorooctanesulfonamide	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
NMeFOSA	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
NMeFOSAA	ND		3.6	1.1	ng/L		12/01/23 15:25	12/08/23 12:26	1
NEtFOSAA	**0.87**	**J**	1.8	0.64	ng/L		12/01/23 15:25	12/08/23 12:26	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.5	ng/L		12/01/23 15:25	12/08/23 12:26	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.5	ng/L		12/01/23 15:25	12/08/23 12:26	1
HFPO-DA	ND		7.3	1.8	ng/L		12/01/23 15:25	12/08/23 12:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.3	1.4	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoro-3-methoxypropanoic acid	ND		3.6	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoro(4-methoxybutanoic acid)	ND		3.6	0.91	ng/L		12/01/23 15:25	12/08/23 12:26	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.6	0.91	ng/L		12/01/23 15:25	12/08/23 12:26	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152590-1

Client Sample ID: Outfall-001
Date Collected: 11/27/23 12:10
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-1
Matrix: Groundwater

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.3	0.91	ng/L		12/01/23 15:25	12/08/23 12:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.3	1.8	ng/L		12/01/23 15:25	12/08/23 12:26	1
PFEESA	ND		3.6	0.45	ng/L		12/01/23 15:25	12/08/23 12:26	1
3:3 FTCA	**2.1**	**J I**	9.1	1.4	ng/L		12/01/23 15:25	12/08/23 12:26	1
5:3 FTCA	ND		45	9.1	ng/L		12/01/23 15:25	12/08/23 12:26	1
7:3 FTCA	ND		45	9.1	ng/L		12/01/23 15:25	12/08/23 12:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*18.5*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C5 PFPeA	*51.3*		*35 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C5 PFHxA	*55.1*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C4 PFHpA	*59.0*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C8 PFOA	*65.9*		*60 - 140*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C9 PFNA	*75.6*		*55 - 140*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C6 PFDA	*77.8*		*50 - 140*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C7 PFUnA	*73.1*		*30 - 140*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C2-PFDoDA	*64.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C2 PFTeDA	*49.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C3 PFBS	*112*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C3 PFHxS	*90.8*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C8 PFOS	*78.4*		*45 - 140*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C8 FOSA	*96.0*		*30 - 130*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
d3-NMeFOSAA	*68.3*		*45 - 200*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
d5-NEtFOSAA	*69.7*		*10 - 200*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
M2-4:2 FTS	*126*		*60 - 200*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
M2-6:2 FTS	*134*		*60 - 200*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
M2-8:2 FTS	*166*		*50 - 200*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
13C3 HFPO-DA	*49.4*		*25 - 160*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
d7-N-MeFOSE-M	*60.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
d9-N-EtFOSE-M	*55.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
d5-NEtPFOSA	*43.9*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:26*	*1*
d3-NMePFOSA	*47.8*		*15 - 130*	*12/01/23 15:25*	*12/08/23 12:26*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**60**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**6900**		1000	500	ug/L			11/30/23 14:05	1
TOC Result 1 (SW846 9060A)	**6800**		1000	500	ug/L			11/30/23 14:05	1
TOC Result 2 (SW846 9060A)	**6900**		1000	500	ug/L			11/30/23 14:05	1
TOC Result 3 (SW846 9060A)	**7000**		1000	500	ug/L			11/30/23 14:05	1
TOC Result 4 (SW846 9060A)	**7000**		1000	500	ug/L			11/30/23 14:05	1

Client Sample ID: Outfall-002
Date Collected: 11/27/23 14:05
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-2
Matrix: Groundwater

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.58**		0.31	0.10	ug/L		12/02/23 07:54	12/04/23 09:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*78*		*17 - 120*	*12/02/23 07:54*	*12/04/23 09:59*	*1*
Fluoranthene-d10 (Surr)	*102*		*43 - 124*	*12/02/23 07:54*	*12/04/23 09:59*	*1*
1-Methylnaphthalene-d10 (Surr)	*89*		*33 - 120*	*12/02/23 07:54*	*12/04/23 09:59*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**27**		7.8	1.9	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoropentanoic acid	**31**		3.9	0.97	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorohexanoic acid	**44**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoroheptanoic acid	**54**		1.9	0.50	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorooctanoic acid	**130**		1.9	0.62	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorononanoic acid	**81**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorodecanoic acid	**4.4**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoroundecanoic acid	**7.9**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorododecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorotridecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorotetradecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorobutanesulfonic acid	**5.3**		1.9	0.29	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoropentanesulfonic acid	**1.8**	**J**	1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorohexanesulfonic acid	**9.4**		1.9	0.55	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoroheptanesulfonic acid	**0.45**	**J**	1.9	0.39	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorooctanesulfonic acid	**9.4**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorononanesulfonic acid	ND		1.9	0.39	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorodecanesulfonic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9	0.87	ng/L		12/01/23 15:25	12/08/23 12:39	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.8	1.6	ng/L		12/01/23 15:25	12/08/23 12:39	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		7.8	2.4	ng/L		12/01/23 15:25	12/08/23 12:39	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.8	2.5	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluorooctanesulfonamide	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
NMeFOSA	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
NMeFOSAA	ND		3.9	1.2	ng/L		12/01/23 15:25	12/08/23 12:39	1
NEtFOSAA	ND		1.9	0.68	ng/L		12/01/23 15:25	12/08/23 12:39	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.8	ng/L		12/01/23 15:25	12/08/23 12:39	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.8	ng/L		12/01/23 15:25	12/08/23 12:39	1
HFPO-DA	ND		7.8	1.9	ng/L		12/01/23 15:25	12/08/23 12:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.8	1.5	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoro-3-methoxypropanoic acid	ND		3.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoro(4-methoxybutanoic acid)	ND		3.9	0.97	ng/L		12/01/23 15:25	12/08/23 12:39	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.9	0.97	ng/L		12/01/23 15:25	12/08/23 12:39	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152590-1

Client Sample ID: Outfall-002
Date Collected: 11/27/23 14:05
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-2
Matrix: Groundwater

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.8	0.97	ng/L		12/01/23 15:25	12/08/23 12:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.8	1.9	ng/L		12/01/23 15:25	12/08/23 12:39	1
PFEESA	ND		3.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:39	1
3:3 FTCA	**2.6**	**J I**	9.7	1.5	ng/L		12/01/23 15:25	12/08/23 12:39	1
5:3 FTCA	ND		48	9.7	ng/L		12/01/23 15:25	12/08/23 12:39	1
7:3 FTCA	ND		48	9.7	ng/L		12/01/23 15:25	12/08/23 12:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*46.3*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C5 PFPeA	*70.4*		*35 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C5 PFHxA	*73.0*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C4 PFHpA	*78.9*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C8 PFOA	*71.9*		*60 - 140*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C9 PFNA	*78.4*		*55 - 140*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C6 PFDA	*78.9*		*50 - 140*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C7 PFUnA	*63.4*		*30 - 140*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C2-PFDoDA	*57.7*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C2 PFTeDA	*52.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C3 PFBS	*83.0*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C3 PFHxS	*75.6*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C8 PFOS	*77.0*		*45 - 140*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C8 FOSA	*79.1*		*30 - 130*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
d3-NMeFOSAA	*69.9*		*45 - 200*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
d5-NEtFOSAA	*69.2*		*10 - 200*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
M2-4:2 FTS	*128*		*60 - 200*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
M2-6:2 FTS	*113*		*60 - 200*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
M2-8:2 FTS	*93.3*		*50 - 200*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
13C3 HFPO-DA	*59.5*		*25 - 160*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
d7-N-MeFOSE-M	*57.2*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
d9-N-EtFOSE-M	*58.3*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
d5-NEtPFOSA	*42.8*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:39*	*1*
d3-NMePFOSA	*45.6*		*15 - 130*	*12/01/23 15:25*	*12/08/23 12:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**60**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**3300**		1000	500	ug/L			11/30/23 15:59	1
TOC Result 1 (SW846 9060A)	**3300**		1000	500	ug/L			11/30/23 15:59	1
TOC Result 2 (SW846 9060A)	**3200**		1000	500	ug/L			11/30/23 15:59	1
TOC Result 3 (SW846 9060A)	**3400**		1000	500	ug/L			11/30/23 15:59	1
TOC Result 4 (SW846 9060A)	**3400**		1000	500	ug/L			11/30/23 15:59	1

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152590-3
Date Collected: 11/27/23 11:45
Matrix: Groundwater
Date Received: 11/28/23 20:00

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.43		0.31	0.10	ug/L		12/02/23 07:54	12/04/23 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*87*		*17 - 120*	*12/02/23 07:54*	*12/04/23 10:21*	*1*
Fluoranthene-d10 (Surr)	*85*		*43 - 124*	*12/02/23 07:54*	*12/04/23 10:21*	*1*
1-Methylnaphthalene-d10 (Surr)	*110*		*33 - 120*	*12/02/23 07:54*	*12/04/23 10:21*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	11		7.6	1.9	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoropentanoic acid	27		3.8	0.96	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorohexanoic acid	40	I	1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoroheptanoic acid	26		1.9	0.50	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorooctanoic acid	110		1.9	0.61	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorononanoic acid	9.2		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorodecanoic acid	1.1	J	1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoroundecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorododecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorotridecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorotetradecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorobutanesulfonic acid	35	I	1.9	0.29	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoropentanesulfonic acid	3.0	I	1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorohexanesulfonic acid	8.6		1.9	0.55	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoroheptanesulfonic acid	ND		1.9	0.38	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorooctanesulfonic acid	9.2		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorononanesulfonic acid	ND		1.9	0.38	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorodecanesulfonic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9	0.86	ng/L		12/01/23 15:25	12/08/23 12:52	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.6	1.6	ng/L		12/01/23 15:25	12/08/23 12:52	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	29		7.6	2.4	ng/L		12/01/23 15:25	12/08/23 12:52	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.6	2.5	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluorooctanesulfonamide	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
NMeFOSA	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
NMeFOSAA	ND		3.8	1.1	ng/L		12/01/23 15:25	12/08/23 12:52	1
NEtFOSAA	0.92	J	1.9	0.67	ng/L		12/01/23 15:25	12/08/23 12:52	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.8	ng/L		12/01/23 15:25	12/08/23 12:52	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.8	ng/L		12/01/23 15:25	12/08/23 12:52	1
HFPO-DA	ND		7.6	1.9	ng/L		12/01/23 15:25	12/08/23 12:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.6	1.4	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoro-3-methoxypropanoic acid	ND		3.8	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoro(4-methoxybutanoic acid)	ND		3.8	0.96	ng/L		12/01/23 15:25	12/08/23 12:52	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.8	0.96	ng/L		12/01/23 15:25	12/08/23 12:52	1

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152590-3

Date Collected: 11/27/23 11:45
Matrix: Groundwater

Date Received: 11/28/23 20:00

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.6	0.96	ng/L		12/01/23 15:25	12/08/23 12:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.6	1.9	ng/L		12/01/23 15:25	12/08/23 12:52	1
PFEESA	ND		3.8	0.48	ng/L		12/01/23 15:25	12/08/23 12:52	1
3:3 FTCA	**2.1**	**J**	9.6	1.4	ng/L		12/01/23 15:25	12/08/23 12:52	1
5:3 FTCA	ND		48	9.6	ng/L		12/01/23 15:25	12/08/23 12:52	1
7:3 FTCA	ND		48	9.6	ng/L		12/01/23 15:25	12/08/23 12:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*21.5*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C5 PFPeA	*46.0*		*35 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C5 PFHxA	*51.1*	**5-*	*55 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C4 PFHpA	*55.0*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C8 PFOA	*54.3*	**5-*	*60 - 140*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C9 PFNA	*68.9*		*55 - 140*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C6 PFDA	*74.6*		*50 - 140*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C7 PFUnA	*67.1*		*30 - 140*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C2-PFDoDA	*56.0*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C2 PFTeDA	*42.0*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C3 PFBS	*102*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C3 PFHxS	*78.1*		*55 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C8 PFOS	*70.4*		*45 - 140*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C8 FOSA	*90.0*		*30 - 130*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
d3-NMeFOSAA	*63.7*		*45 - 200*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
d5-NEtFOSAA	*65.5*		*10 - 200*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
M2-4:2 FTS	*115*		*60 - 200*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
M2-6:2 FTS	*120*		*60 - 200*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
M2-8:2 FTS	*152*		*50 - 200*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
13C3 HFPO-DA	*42.2*		*25 - 160*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
d7-N-MeFOSE-M	*53.7*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
d9-N-EtFOSE-M	*48.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
d5-NEtPFOSA	*40.0*		*10 - 130*	*12/01/23 15:25*	*12/08/23 12:52*	*1*
d3-NMePFOSA	*47.2*		*15 - 130*	*12/01/23 15:25*	*12/08/23 12:52*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	ND		76	19	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoropentanoic acid	**29**	**J**	38	9.6	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorohexanoic acid	**27**		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoroheptanoic acid	**20**		19	5.0	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorooctanoic acid	**76**		19	6.1	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorononanoic acid	**8.2**	**J**	19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorodecanoic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoroundecanoic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorododecanoic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorotridecanoic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorotetradecanoic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorobutanesulfonic acid	**43**	**I**	19	2.9	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoropentanesulfonic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorohexanesulfonic acid	**8.0**	**J**	19	5.5	ng/L		12/01/23 15:25	12/11/23 21:15	10

Client Sample ID: Outfall-01A
Date Collected: 11/27/23 11:45
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-3
Matrix: Groundwater

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid	ND		19	3.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorooctanesulfonic acid	**11**	**J**	19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorononanesulfonic acid	ND		19	3.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorodecanesulfonic acid	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorododecanesulfonic acid (PFDoS)	ND		19	8.6	ng/L		12/01/23 15:25	12/11/23 21:15	10
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		76	16	ng/L		12/01/23 15:25	12/11/23 21:15	10
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	**25**	**J**	76	24	ng/L		12/01/23 15:25	12/11/23 21:15	10
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		76	25	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluorooctanesulfonamide	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
NMeFOSA	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
N-ethylperfluoro-1-octanesulfonamide	ND		19	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
NMeFOSAA	ND		38	11	ng/L		12/01/23 15:25	12/11/23 21:15	10
NEtFOSAA	ND		19	6.7	ng/L		12/01/23 15:25	12/11/23 21:15	10
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		190	48	ng/L		12/01/23 15:25	12/11/23 21:15	10
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		190	48	ng/L		12/01/23 15:25	12/11/23 21:15	10
HFPO-DA	ND		76	19	ng/L		12/01/23 15:25	12/11/23 21:15	10
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		76	14	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoro-3-methoxypropanoic acid	ND		38	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoro(4-methoxybutanoic acid)	ND		38	9.6	ng/L		12/01/23 15:25	12/11/23 21:15	10
Perfluoro-3,6-dioxaheptanoic acid	ND		38	9.6	ng/L		12/01/23 15:25	12/11/23 21:15	10
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		76	9.6	ng/L		12/01/23 15:25	12/11/23 21:15	10
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		76	19	ng/L		12/01/23 15:25	12/11/23 21:15	10
PFEESA	ND		38	4.8	ng/L		12/01/23 15:25	12/11/23 21:15	10
3:3 FTCA	ND		96	14	ng/L		12/01/23 15:25	12/11/23 21:15	10
5:3 FTCA	ND		480	96	ng/L		12/01/23 15:25	12/11/23 21:15	10
7:3 FTCA	ND		480	96	ng/L		12/01/23 15:25	12/11/23 21:15	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*28.9*		*10 - 130*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C5 PFPeA	*66.7*		*35 - 150*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C5 PFHxA	*69.8*		*55 - 150*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C4 PFHpA	*69.4*		*55 - 150*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C8 PFOA	*62.5*		*60 - 140*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C9 PFNA	*65.4*		*55 - 140*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C6 PFDA	*68.9*		*50 - 140*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C7 PFUnA	*64.0*		*30 - 140*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C2-PFDoDA	*51.6*		*10 - 150*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C2 PFTeDA	*46.9*		*10 - 130*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C3 PFBS	*96.0*		*55 - 150*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C3 PFHxS	*72.7*		*55 - 150*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C8 PFOS	*57.7*		*45 - 140*	*12/01/23 15:25*	*12/11/23 21:15*	*10*
13C8 FOSA	*68.9*		*30 - 130*	*12/01/23 15:25*	*12/11/23 21:15*	*10*

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152590-3
Date Collected: 11/27/23 11:45
Matrix: Groundwater
Date Received: 11/28/23 20:00

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	62.8		45 - 200	12/01/23 15:25	12/11/23 21:15	10
d5-NEtFOSAA	57.2		10 - 200	12/01/23 15:25	12/11/23 21:15	10
M2-4:2 FTS	106		60 - 200	12/01/23 15:25	12/11/23 21:15	10
M2-6:2 FTS	91.9		60 - 200	12/01/23 15:25	12/11/23 21:15	10
M2-8:2 FTS	68.9		50 - 200	12/01/23 15:25	12/11/23 21:15	10
13C3 HFPO-DA	64.3		25 - 160	12/01/23 15:25	12/11/23 21:15	10
d7-N-MeFOSE-M	49.7		10 - 150	12/01/23 15:25	12/11/23 21:15	10
d9-N-EtFOSE-M	43.4		10 - 150	12/01/23 15:25	12/11/23 21:15	10
d5-NEtPFOSA	38.9		10 - 130	12/01/23 15:25	12/11/23 21:15	10
d3-NMePFOSA	43.3		15 - 130	12/01/23 15:25	12/11/23 21:15	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	90		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	6700		1000	500	ug/L			11/30/23 16:37	1
TOC Result 1 (SW846 9060A)	6300		1000	500	ug/L			11/30/23 16:37	1
TOC Result 2 (SW846 9060A)	6500		1000	500	ug/L			11/30/23 16:37	1
TOC Result 3 (SW846 9060A)	6900		1000	500	ug/L			11/30/23 16:37	1
TOC Result 4 (SW846 9060A)	7100		1000	500	ug/L			11/30/23 16:37	1

Client Sample ID: Outfall-001
Date Collected: 11/28/23 10:50
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-4
Matrix: Groundwater

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.43**		0.30	0.10	ug/L		12/02/23 07:54	12/04/23 10:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*90*		*17 - 120*	*12/02/23 07:54*	*12/04/23 10:43*	*1*
Fluoranthene-d10 (Surr)	*86*		*43 - 124*	*12/02/23 07:54*	*12/04/23 10:43*	*1*
1-Methylnaphthalene-d10 (Surr)	*108*		*33 - 120*	*12/02/23 07:54*	*12/04/23 10:43*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**9.8**		7.3	1.8	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoropentanoic acid	**29**		3.6	0.91	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorohexanoic acid	**41**	**I**	1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoroheptanoic acid	**26**		1.8	0.47	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorooctanoic acid	**110**	**I**	1.8	0.58	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorononanoic acid	**8.6**		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorodecanoic acid	**1.4**	**J**	1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoroundecanoic acid	**0.76**	**J**	1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorododecanoic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorotridecanoic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorotetradecanoic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorobutanesulfonic acid	**37**	**I**	1.8	0.27	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoropentanesulfonic acid	**1.7**	**J**	1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorohexanesulfonic acid	**8.7**		1.8	0.52	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoroheptanesulfonic acid	ND		1.8	0.36	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorooctanesulfonic acid	**8.5**		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorononanesulfonic acid	ND		1.8	0.36	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorodecanesulfonic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8	0.82	ng/L		12/01/23 15:25	12/08/23 13:05	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.3	1.5	ng/L		12/01/23 15:25	12/08/23 13:05	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	**32**		7.3	2.3	ng/L		12/01/23 15:25	12/08/23 13:05	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.3	2.4	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluorooctanesulfonamide	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
NMeFOSA	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
NMeFOSAA	ND		3.6	1.1	ng/L		12/01/23 15:25	12/08/23 13:05	1
NEtFOSAA	**0.65**	**J**	1.8	0.64	ng/L		12/01/23 15:25	12/08/23 13:05	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.6	ng/L		12/01/23 15:25	12/08/23 13:05	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.6	ng/L		12/01/23 15:25	12/08/23 13:05	1
HFPO-DA	ND		7.3	1.8	ng/L		12/01/23 15:25	12/08/23 13:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.3	1.4	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoro-3-methoxypropanoic acid	ND		3.6	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoro(4-methoxybutanoic acid)	ND		3.6	0.91	ng/L		12/01/23 15:25	12/08/23 13:05	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.6	0.91	ng/L		12/01/23 15:25	12/08/23 13:05	1

Client Sample ID: Outfall-001
Lab Sample ID: 410-152590-4
Date Collected: 11/28/23 10:50
Matrix: Groundwater
Date Received: 11/28/23 20:00

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.3	0.91	ng/L		12/01/23 15:25	12/08/23 13:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.3	1.8	ng/L		12/01/23 15:25	12/08/23 13:05	1
PFEESA	ND		3.6	0.46	ng/L		12/01/23 15:25	12/08/23 13:05	1
3:3 FTCA	**1.6**	**J I**	9.1	1.4	ng/L		12/01/23 15:25	12/08/23 13:05	1
5:3 FTCA	ND		46	9.1	ng/L		12/01/23 15:25	12/08/23 13:05	1
7:3 FTCA	ND		46	9.1	ng/L		12/01/23 15:25	12/08/23 13:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*22.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C5 PFPeA	*51.1*		*35 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C5 PFHxA	*55.7*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C4 PFHpA	*61.4*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C8 PFOA	*63.8*		*60 - 140*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C9 PFNA	*80.0*		*55 - 140*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C6 PFDA	*81.3*		*50 - 140*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C7 PFUnA	*75.1*		*30 - 140*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C2-PFDoDA	*64.3*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C2 PFTeDA	*49.2*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C3 PFBS	*116*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C3 PFHxS	*81.6*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C8 PFOS	*80.4*		*45 - 140*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C8 FOSA	*97.3*		*30 - 130*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
d3-NMeFOSAA	*72.0*		*45 - 200*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
d5-NEtFOSAA	*73.8*		*10 - 200*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
M2-4:2 FTS	*128*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
M2-6:2 FTS	*128*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
M2-8:2 FTS	*161*		*50 - 200*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
13C3 HFPO-DA	*47.0*		*25 - 160*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
d7-N-MeFOSE-M	*58.6*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
d9-N-EtFOSE-M	*47.6*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
d5-NEtPFOSA	*49.8*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:05*	*1*
d3-NMePFOSA	*55.7*		*15 - 130*	*12/01/23 15:25*	*12/08/23 13:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**60**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**6500**		1000	500	ug/L			11/30/23 17:15	1
TOC Result 1 (SW846 9060A)	**6300**		1000	500	ug/L			11/30/23 17:15	1
TOC Result 2 (SW846 9060A)	**6400**		1000	500	ug/L			11/30/23 17:15	1
TOC Result 3 (SW846 9060A)	**6600**		1000	500	ug/L			11/30/23 17:15	1
TOC Result 4 (SW846 9060A)	**6800**		1000	500	ug/L			11/30/23 17:15	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152590-1

Client Sample ID: Outfall-002

Date Collected: 11/28/23 10:20
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-5

Matrix: Groundwater

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.66**		0.30	0.10	ug/L		12/02/23 07:54	12/04/23 11:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*79*		*17 - 120*	*12/02/23 07:54*	*12/04/23 11:06*	*1*
Fluoranthene-d10 (Surr)	*103*		*43 - 124*	*12/02/23 07:54*	*12/04/23 11:06*	*1*
1-Methylnaphthalene-d10 (Surr)	*99*		*33 - 120*	*12/02/23 07:54*	*12/04/23 11:06*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**27**		7.6	1.9	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoropentanoic acid	**31**		3.8	0.95	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorohexanoic acid	**46**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoroheptanoic acid	**52**		1.9	0.50	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorooctanoic acid	**120**		1.9	0.61	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorononanoic acid	**78**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorodecanoic acid	**5.2**	**I**	1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoroundecanoic acid	**8.4**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorododecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorotridecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorotetradecanoic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorobutanesulfonic acid	**6.7**	**I**	1.9	0.29	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoropentanesulfonic acid	**2.7**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorohexanesulfonic acid	**9.8**		1.9	0.54	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoroheptanesulfonic acid	**0.53**	**J**	1.9	0.38	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorooctanesulfonic acid	**10**		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorononanesulfonic acid	ND		1.9	0.38	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorodecanesulfonic acid	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9	0.86	ng/L		12/01/23 15:25	12/08/23 13:18	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.6	1.6	ng/L		12/01/23 15:25	12/08/23 13:18	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		7.6	2.4	ng/L		12/01/23 15:25	12/08/23 13:18	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.6	2.5	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluorooctanesulfonamide	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
NMeFOSA	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.9	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
NMeFOSAA	ND		3.8	1.1	ng/L		12/01/23 15:25	12/08/23 13:18	1
NEtFOSAA	**0.79**	**J**	1.9	0.67	ng/L		12/01/23 15:25	12/08/23 13:18	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.8	ng/L		12/01/23 15:25	12/08/23 13:18	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.8	ng/L		12/01/23 15:25	12/08/23 13:18	1
HFPO-DA	ND		7.6	1.9	ng/L		12/01/23 15:25	12/08/23 13:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.6	1.4	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoro-3-methoxypropanoic acid	ND		3.8	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoro(4-methoxybutanoic acid)	ND		3.8	0.95	ng/L		12/01/23 15:25	12/08/23 13:18	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.8	0.95	ng/L		12/01/23 15:25	12/08/23 13:18	1

Client Sample ID: Outfall-002
Lab Sample ID: 410-152590-5
Date Collected: 11/28/23 10:20
Matrix: Groundwater
Date Received: 11/28/23 20:00

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.6	0.95	ng/L		12/01/23 15:25	12/08/23 13:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.6	1.9	ng/L		12/01/23 15:25	12/08/23 13:18	1
PFEESA	ND		3.8	0.48	ng/L		12/01/23 15:25	12/08/23 13:18	1
3:3 FTCA	**2.1**	**J I**	9.5	1.4	ng/L		12/01/23 15:25	12/08/23 13:18	1
5:3 FTCA	ND		48	9.5	ng/L		12/01/23 15:25	12/08/23 13:18	1
7:3 FTCA	ND		48	9.5	ng/L		12/01/23 15:25	12/08/23 13:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*48.0*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C5 PFPeA	*70.9*		*35 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C5 PFHxA	*75.7*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C4 PFHpA	*78.1*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C8 PFOA	*73.2*		*60 - 140*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C9 PFNA	*81.6*		*55 - 140*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C6 PFDA	*80.9*		*50 - 140*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C7 PFUnA	*71.5*		*30 - 140*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C2-PFDoDA	*61.1*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C2 PFTeDA	*56.5*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C3 PFBS	*83.3*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C3 PFHxS	*77.9*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C8 PFOS	*81.6*		*45 - 140*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C8 FOSA	*84.0*		*30 - 130*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
d3-NMeFOSAA	*80.2*		*45 - 200*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
d5-NEtFOSAA	*70.8*		*10 - 200*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
M2-4:2 FTS	*135*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
M2-6:2 FTS	*118*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
M2-8:2 FTS	*105*		*50 - 200*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
13C3 HFPO-DA	*64.9*		*25 - 160*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
d7-N-MeFOSE-M	*62.3*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
d9-N-EtFOSE-M	*59.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
d5-NEtPFOSA	*45.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:18*	*1*
d3-NMePFOSA	*49.3*		*15 - 130*	*12/01/23 15:25*	*12/08/23 13:18*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**60**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**3300**		1000	500	ug/L			11/30/23 17:53	1
TOC Result 1 (SW846 9060A)	**3100**		1000	500	ug/L			11/30/23 17:53	1
TOC Result 2 (SW846 9060A)	**3300**		1000	500	ug/L			11/30/23 17:53	1
TOC Result 3 (SW846 9060A)	**3400**		1000	500	ug/L			11/30/23 17:53	1
TOC Result 4 (SW846 9060A)	**3500**		1000	500	ug/L			11/30/23 17:53	1

Client Sample ID: Outfall-01A
Date Collected: 11/28/23 09:50
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-6
Matrix: Groundwater

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.45**		0.31	0.10	ug/L		12/02/23 07:54	12/04/23 11:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*93*		*17 - 120*	*12/02/23 07:54*	*12/04/23 11:28*	*1*
Fluoranthene-d10 (Surr)	*90*		*43 - 124*	*12/02/23 07:54*	*12/04/23 11:28*	*1*
1-Methylnaphthalene-d10 (Surr)	*111*		*33 - 120*	*12/02/23 07:54*	*12/04/23 11:28*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**13**		7.8	2.0	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoropentanoic acid	**28**		3.9	0.98	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorohexanoic acid	**39**	**I**	2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoroheptanoic acid	**25**		2.0	0.51	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorooctanoic acid	**120**	**I**	2.0	0.63	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorononanoic acid	**8.4**	**I**	2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorodecanoic acid	**1.2**	**J I**	2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoroundecanoic acid	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorododecanoic acid	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorotridecanoic acid	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorotetradecanoic acid	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorobutanesulfonic acid	**47**	**I**	2.0	0.29	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoropentanesulfonic acid	**2.0**		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorohexanesulfonic acid	**8.1**		2.0	0.56	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoroheptanesulfonic acid	ND		2.0	0.39	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorooctanesulfonic acid	**9.6**		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorononanesulfonic acid	ND		2.0	0.39	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorodecanesulfonic acid	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0	0.88	ng/L		12/01/23 15:25	12/08/23 13:31	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.8	1.7	ng/L		12/01/23 15:25	12/08/23 13:31	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	**30**		7.8	2.4	ng/L		12/01/23 15:25	12/08/23 13:31	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.8	2.5	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluorooctanesulfonamide	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
NMeFOSA	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
N-ethylperfluoro-1-octanesulfonamide	ND		2.0	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
NMeFOSAA	ND		3.9	1.2	ng/L		12/01/23 15:25	12/08/23 13:31	1
NEtFOSAA	ND		2.0	0.68	ng/L		12/01/23 15:25	12/08/23 13:31	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		20	4.9	ng/L		12/01/23 15:25	12/08/23 13:31	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		20	4.9	ng/L		12/01/23 15:25	12/08/23 13:31	1
HFPO-DA	ND		7.8	2.0	ng/L		12/01/23 15:25	12/08/23 13:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.8	1.5	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoro-3-methoxypropanoic acid	ND		3.9	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoro(4-methoxybutanoic acid)	ND		3.9	0.98	ng/L		12/01/23 15:25	12/08/23 13:31	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.9	0.98	ng/L		12/01/23 15:25	12/08/23 13:31	1

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152590-6
Date Collected: 11/28/23 09:50
Matrix: Groundwater
Date Received: 11/28/23 20:00

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.8	0.98	ng/L		12/01/23 15:25	12/08/23 13:31	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.8	2.0	ng/L		12/01/23 15:25	12/08/23 13:31	1
PFEESA	ND		3.9	0.49	ng/L		12/01/23 15:25	12/08/23 13:31	1
3:3 FTCA	**2.3**	**J**	9.8	1.5	ng/L		12/01/23 15:25	12/08/23 13:31	1
5:3 FTCA	ND		49	9.8	ng/L		12/01/23 15:25	12/08/23 13:31	1
7:3 FTCA	ND		49	9.8	ng/L		12/01/23 15:25	12/08/23 13:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*30.1*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C5 PFPeA	*51.0*		*35 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C5 PFHxA	*57.5*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C4 PFHpA	*63.0*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C8 PFOA	*81.4*		*60 - 140*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C9 PFNA	*80.4*		*55 - 140*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C6 PFDA	*79.0*		*50 - 140*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C7 PFUnA	*71.8*		*30 - 140*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C2-PFDoDA	*62.6*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C2 PFTeDA	*46.3*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C3 PFBS	*114*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C3 PFHxS	*95.1*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C8 PFOS	*79.6*		*45 - 140*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C8 FOSA	*95.4*		*30 - 130*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
d3-NMeFOSAA	*71.8*		*45 - 200*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
d5-NEtFOSAA	*73.2*		*10 - 200*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
M2-4:2 FTS	*130*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
M2-6:2 FTS	*130*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
M2-8:2 FTS	*167*		*50 - 200*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
13C3 HFPO-DA	*45.9*		*25 - 160*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
d7-N-MeFOSE-M	*56.0*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
d9-N-EtFOSE-M	*50.7*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
d5-NEtPFOSA	*50.5*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:31*	*1*
d3-NMePFOSA	*58.4*		*15 - 130*	*12/01/23 15:25*	*12/08/23 13:31*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**30**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**6600**		1000	500	ug/L			11/30/23 18:31	1
TOC Result 1 (SW846 9060A)	**6200**		1000	500	ug/L			11/30/23 18:31	1
TOC Result 2 (SW846 9060A)	**6500**		1000	500	ug/L			11/30/23 18:31	1
TOC Result 3 (SW846 9060A)	**6800**		1000	500	ug/L			11/30/23 18:31	1
TOC Result 4 (SW846 9060A)	**6900**		1000	500	ug/L			11/30/23 18:31	1

Surrogate Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	FLN10	MNPd10
Lab Sample ID	Client Sample ID	(17-120)	(43-124)	(33-120)
410-152590-1	Outfall-001	93	87	113
410-152590-2	Outfall-002	78	102	89
410-152590-3	Outfall-01A	87	85	110
410-152590-4	Outfall-001	90	86	108
410-152590-5	Outfall-002	79	103	99
410-152590-6	Outfall-01A	93	90	111

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
FLN10 = Fluoranthene-d10 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	FLN10	MNPd10
Lab Sample ID	Client Sample ID	(17-120)	(43-124)	(33-120)
LCS 410-449388/2-A	Lab Control Sample	103	98	99
MB 410-449388/1-A	Method Blank	83	102	97

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
FLN10 = Fluoranthene-d10 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(10-130)	(35-150)	(55-150)	(55-150)	(60-140)	(55-140)	(50-140)	(30-140)
410-152590-1	Outfall-001	18.5	51.3	55.1	59.0	65.9	75.6	77.8	73.1
410-152590-2	Outfall-002	46.3	70.4	73.0	78.9	71.9	78.4	78.9	63.4
410-152590-3	Outfall-01A	21.5	46.0	51.1 *5-	55.0	54.3 *5-	68.9	74.6	67.1
410-152590-3 - DL	Outfall-01A	28.9	66.7	69.8	69.4	62.5	65.4	68.9	64.0
410-152590-4	Outfall-001	22.6	51.1	55.7	61.4	63.8	80.0	81.3	75.1
410-152590-5	Outfall-002	48.0	70.9	75.7	78.1	73.2	81.6	80.9	71.5
410-152590-6	Outfall-01A	30.1	51.0	57.5	63.0	81.4	80.4	79.0	71.8

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(10-150)	(10-130)	(55-150)	(55-150)	(45-140)	(30-130)	(45-200)	(10-200)
410-152590-1	Outfall-001	64.4	49.6	112	90.8	78.4	96.0	68.3	69.7
410-152590-2	Outfall-002	57.7	52.6	83.0	75.6	77.0	79.1	69.9	69.2
410-152590-3	Outfall-01A	56.0	42.0	102	78.1	70.4	90.0	63.7	65.5
410-152590-3 - DL	Outfall-01A	51.6	46.9	96.0	72.7	57.7	68.9	62.8	57.2
410-152590-4	Outfall-001	64.3	49.2	116	81.6	80.4	97.3	72.0	73.8
410-152590-5	Outfall-002	61.1	56.5	83.3	77.9	81.6	84.0	80.2	70.8
410-152590-6	Outfall-01A	62.6	46.3	114	95.1	79.6	95.4	71.8	73.2

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(60-200)	(60-200)	(50-200)	(25-160)	(10-150)	(10-150)	(10-130)	(15-130)
410-152590-1	Outfall-001	126	134	166	49.4	60.4	55.4	43.9	47.8
410-152590-2	Outfall-002	128	113	93.3	59.5	57.2	58.3	42.8	45.6
410-152590-3	Outfall-01A	115	120	152	42.2	53.7	48.4	40.0	47.2
410-152590-3 - DL	Outfall-01A	106	91.9	68.9	64.3	49.7	43.4	38.9	43.3
410-152590-4	Outfall-001	128	128	161	47.0	58.6	47.6	49.8	55.7
410-152590-5	Outfall-002	135	118	105	64.9	62.3	59.4	45.6	49.3
410-152590-6	Outfall-01A	130	130	167	45.9	56.0	50.7	50.5	58.4

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA

NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(10-130)	(40-150)	(40-150)	(40-150)	(30-140)	(30-140)	(20-140)	(20-140)
LCS 410-449184/2-A	Lab Control Sample	70.6	80.5	77.7	77.1	68.4	77.6	82.3	78.3
LLCS 410-449184/3-A	Lab Control Sample	72.5	87.8	78.4	77.3	67.4	80.6	85.8	80.0

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(10-150)	(10-130)	(25-150)	(25-150)	(20-140)	(10-130)	(10-200)	(10-200)
LCS 410-449184/2-A	Lab Control Sample	74.4	69.1	81.9	75.9	80.4	83.4	78.9	72.3
LLCS 410-449184/3-A	Lab Control Sample	75.7	73.8	78.1	76.1	84.0	85.8	82.2	80.0

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(25-200)	(25-200)	(25-200)	(25-160)	(10-150)	(10-150)	(10-130)	(10-130)
LCS 410-449184/2-A	Lab Control Sample	87.5	90.3	84.2	72.3	68.6	68.3	59.0	59.4
LLCS 410-449184/3-A	Lab Control Sample	79.1	86.1	80.6	68.7	76.9	74.8	59.6	58.1

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(10-130)	(35-150)	(55-150)	(55-150)	(60-140)	(55-140)	(50-140)	(30-140)
MB 410-449184/1-A	Method Blank	65.9	68.6	63.2	63.2	68.4	76.4	78.1	71.6

Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoDA (10-150)	PFTDA (10-130)	C3PFBS (55-150)	C3PFHS (55-150)	C8PFOS (45-140)	PFOSA (30-130)	d3NMFOS (45-200)	d5NEFOS (10-200)
MB 410-449184/1-A	Method Blank	68.8	65.9	73.8	68.5	75.0	79.2	75.6	70.7

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M242FTS (60-200)	M262FTS (60-200)	M282FTS (50-200)	HFPODA (25-160)	NMFM (10-150)	NEFM (10-150)	d5NPFSA (10-130)	d3NMFSA (15-130)
MB 410-449184/1-A	Method Blank	76.0	77.4	75.9	62.5	69.6	69.5	53.6	57.9

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-449388/1-A
Matrix: Water
Analysis Batch: 449585

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449388

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.30	0.10	ug/L		12/02/23 07:54	12/04/23 07:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*83*		*17 - 120*	*12/02/23 07:54*	*12/04/23 07:04*	*1*
Fluoranthene-d10 (Surr)	*102*		*43 - 124*	*12/02/23 07:54*	*12/04/23 07:04*	*1*
1-Methylnaphthalene-d10 (Surr)	*97*		*33 - 120*	*12/02/23 07:54*	*12/04/23 07:04*	*1*

Lab Sample ID: LCS 410-449388/2-A
Matrix: Water
Analysis Batch: 449585

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449388

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	1.00	0.553		ug/L		55	10 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*103*		*17 - 120*
Fluoranthene-d10 (Surr)	*98*		*43 - 124*
1-Methylnaphthalene-d10 (Surr)	*99*		*33 - 120*

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 410-449184/1-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	ND		8.0	2.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoropentanoic acid	ND		4.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorohexanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoroheptanoic acid	ND		2.0	0.52	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorooctanoic acid	ND		2.0	0.64	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorononanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorodecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoroundecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorododecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorotridecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorotetradecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorobutanesulfonic acid	ND		2.0	0.30	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoropentanesulfonic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorohexanesulfonic acid	ND		2.0	0.57	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoroheptanesulfonic acid	ND		2.0	0.40	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorononanesulfonic acid	ND		2.0	0.40	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorodecanesulfonic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0	0.90	ng/L		12/01/23 15:25	12/08/23 11:46	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		8.0	1.7	ng/L		12/01/23 15:25	12/08/23 11:46	1

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-449184/1-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		8.0	2.5	ng/L		12/01/23 15:25	12/08/23 11:46	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		8.0	2.6	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorooctanesulfonamide	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
NMeFOSA	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
N-ethylperfluoro-1-octanesulfonamide	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
NMeFOSAA	ND		4.0	1.2	ng/L		12/01/23 15:25	12/08/23 11:46	1
NEtFOSAA	ND		2.0	0.70	ng/L		12/01/23 15:25	12/08/23 11:46	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		20	5.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		20	5.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
HFPO-DA	ND		8.0	2.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		8.0	1.5	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoro-3-methoxypropanoic acid	ND		4.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoro(4-methoxybutanoic acid)	ND		4.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoro-3,6-dioxaheptanoic acid	ND		4.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		8.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		8.0	2.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
PFEESA	ND		4.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
3:3 FTCA	ND		10	1.5	ng/L		12/01/23 15:25	12/08/23 11:46	1
5:3 FTCA	ND		50	10	ng/L		12/01/23 15:25	12/08/23 11:46	1
7:3 FTCA	ND		50	10	ng/L		12/01/23 15:25	12/08/23 11:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65.9*		*10 - 130*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C5 PFPeA	*68.6*		*35 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C5 PFHxA	*63.2*		*55 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C4 PFHpA	*63.2*		*55 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C8 PFOA	*68.4*		*60 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C9 PFNA	*76.4*		*55 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C6 PFDA	*78.1*		*50 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C7 PFUnA	*71.6*		*30 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C2-PFDoDA	*68.8*		*10 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C2 PFTeDA	*65.9*		*10 - 130*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C3 PFBS	*73.8*		*55 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C3 PFHxS	*68.5*		*55 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C8 PFOS	*75.0*		*45 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C8 FOSA	*79.2*		*30 - 130*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
d3-NMeFOSAA	*75.6*		*45 - 200*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
d5-NEtFOSAA	*70.7*		*10 - 200*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
M2-4:2 FTS	*76.0*		*60 - 200*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
M2-6:2 FTS	*77.4*		*60 - 200*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
M2-8:2 FTS	*75.9*		*50 - 200*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C3 HFPO-DA	*62.5*		*25 - 160*	*12/01/23 15:25*	*12/08/23 11:46*	*1*

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-449184/1-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449184

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
d7-N-MeFOSE-M	69.6		10 - 150	12/01/23 15:25	12/08/23 11:46	1
d9-N-EtFOSE-M	69.5		10 - 150	12/01/23 15:25	12/08/23 11:46	1
d5-NEtPFOSA	53.6		10 - 130	12/01/23 15:25	12/08/23 11:46	1
d3-NMePFOSA	57.9		15 - 130	12/01/23 15:25	12/08/23 11:46	1

Lab Sample ID: LCS 410-449184/2-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	100	110		ng/L		110	58 - 148
Perfluoropentanoic acid	50.1	55.5		ng/L		111	54 - 152
Perfluorohexanoic acid	25.0	35.6		ng/L		142	55 - 152
Perfluoroheptanoic acid	25.0	29.0		ng/L		116	54 - 154
Perfluorooctanoic acid	25.0	32.3		ng/L		129	52 - 161
Perfluorononanoic acid	25.0	32.2		ng/L		128	59 - 149
Perfluorodecanoic acid	25.0	25.7		ng/L		103	52 - 147
Perfluoroundecanoic acid	25.0	24.4		ng/L		98	48 - 159
Perfluorododecanoic acid	25.0	26.8		ng/L		107	64 - 142
Perfluorotridecanoic acid	25.0	29.1		ng/L		116	49 - 148
Perfluorotetradecanoic acid	25.0	26.8		ng/L		107	47 - 161
Perfluorobutanesulfonic acid	22.2	23.3		ng/L		105	62 - 144
Perfluoropentanesulfonic acid	23.6	25.3		ng/L		107	59 - 151
Perfluorohexanesulfonic acid	22.9	25.2		ng/L		110	57 - 146
Perfluoroheptanesulfonic acid	23.9	22.4		ng/L		94	55 - 152
Perfluorooctanesulfonic acid	23.2	23.2		ng/L		100	58 - 149
Perfluorononanesulfonic acid	24.1	24.6		ng/L		102	52 - 148
Perfluorodecanesulfonic acid	24.2	23.0		ng/L		95	51 - 147
Perfluorododecanesulfonic acid (PFDoS)	24.3	24.1		ng/L		99	36 - 145
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	93.9	91.7		ng/L		98	67 - 146
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	95.2	96.7		ng/L		102	61 - 151
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	96.2	94.0		ng/L		98	63 - 152
Perfluorooctanesulfonamide	25.0	24.7		ng/L		99	61 - 148
NMeFOSA	25.0	27.1		ng/L		108	63 - 145
N-ethylperfluoro-1-octanesulfonamide	25.0	28.7		ng/L		115	65 - 139
NMeFOSAA	25.0	27.8		ng/L		111	58 - 144
NEtFOSAA	25.0	29.0		ng/L		116	59 - 146
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	250	319		ng/L		127	71 - 136
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	250	272		ng/L		109	69 - 137
HFPO-DA	100	92.1		ng/L		92	63 - 144
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	94.2	99.5		ng/L		106	68 - 146

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-449184/2-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid	50.1	53.0		ng/L		106	51 - 145
Perfluoro(4-methoxybutanoic acid)	50.1	49.2		ng/L		98	55 - 148
Perfluoro-3,6-dioxaheptanoic acid	50.1	44.0		ng/L		88	48 - 161
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	93.2	97.1		ng/L		104	56 - 156
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	94.2	85.8		ng/L		91	46 - 156
PFEESA	44.6	47.7		ng/L		107	56 - 151
3:3 FTCA	125	132		ng/L		106	62 - 129
5:3 FTCA	626	664		ng/L		106	63 - 134
7:3 FTCA	626	626		ng/L		100	50 - 138

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*70.6*		*10 - 130*
13C5 PFPeA	*80.5*		*40 - 150*
13C5 PFHxA	*77.7*		*40 - 150*
13C4 PFHpA	*77.1*		*40 - 150*
13C8 PFOA	*68.4*		*30 - 140*
13C9 PFNA	*77.6*		*30 - 140*
13C6 PFDA	*82.3*		*20 - 140*
13C7 PFUnA	*78.3*		*20 - 140*
13C2-PFDoDA	*74.4*		*10 - 150*
13C2 PFTeDA	*69.1*		*10 - 130*
13C3 PFBS	*81.9*		*25 - 150*
13C3 PFHxS	*75.9*		*25 - 150*
13C8 PFOS	*80.4*		*20 - 140*
13C8 FOSA	*83.4*		*10 - 130*
d3-NMeFOSAA	*78.9*		*10 - 200*
d5-NEtFOSAA	*72.3*		*10 - 200*
M2-4:2 FTS	*87.5*		*25 - 200*
M2-6:2 FTS	*90.3*		*25 - 200*
M2-8:2 FTS	*84.2*		*25 - 200*
13C3 HFPO-DA	*72.3*		*25 - 160*
d7-N-MeFOSE-M	*68.6*		*10 - 150*
d9-N-EtFOSE-M	*68.3*		*10 - 150*
d5-NEtPFOSA	*59.0*		*10 - 130*
d3-NMePFOSA	*59.4*		*10 - 130*

Lab Sample ID: LLCS 410-449184/3-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	16.0	18.5		ng/L		116	44 - 157
Perfluoropentanoic acid	8.00	8.98		ng/L		112	57 - 148
Perfluorohexanoic acid	4.00	4.36		ng/L		109	62 - 149
Perfluoroheptanoic acid	4.00	4.32		ng/L		108	56 - 150

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-449184/3-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid	4.00	5.38		ng/L		134	57 - 161
Perfluorononanoic acid	4.00	5.31		ng/L		133	53 - 157
Perfluorodecanoic acid	4.00	4.46		ng/L		112	43 - 158
Perfluoroundecanoic acid	4.00	4.39		ng/L		110	50 - 155
Perfluorododecanoic acid	4.00	4.59		ng/L		115	60 - 141
Perfluorotridecanoic acid	4.00	4.54		ng/L		114	52 - 140
Perfluorotetradecanoic acid	4.00	4.11		ng/L		103	52 - 156
Perfluorobutanesulfonic acid	3.55	3.82		ng/L		108	63 - 145
Perfluoropentanesulfonic acid	3.76	3.95		ng/L		105	58 - 144
Perfluorohexanesulfonic acid	3.66	4.06		ng/L		111	44 - 158
Perfluoroheptanesulfonic acid	3.81	3.64		ng/L		95	51 - 150
Perfluorooctanesulfonic acid	3.71	3.80		ng/L		102	43 - 162
Perfluorononanesulfonic acid	3.85	3.95		ng/L		103	46 - 151
Perfluorodecanesulfonic acid	3.86	3.95		ng/L		102	50 - 144
Perfluorododecanesulfonic acid (PFDoS)	3.88	3.56		ng/L		92	30 - 138
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	15.0	16.2		ng/L		108	52 - 158
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	15.2	16.2		ng/L		107	48 - 158
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	15.4	17.1		ng/L		111	46 - 165
Perfluorooctanesulfonamide	4.00	3.94		ng/L		98	47 - 163
NMeFOSA	4.00	4.48		ng/L		112	54 - 155
N-ethylperfluoro-1-octanesulfonamide	4.00	4.75		ng/L		119	49 - 156
NMeFOSAA	4.00	4.54		ng/L		113	32 - 160
NEtFOSAA	4.00	4.54		ng/L		113	51 - 154
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	40.0	49.3		ng/L		123	56 - 151
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	40.0	40.7		ng/L		102	60 - 147
HFPO-DA	16.0	19.0		ng/L		119	58 - 154
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	15.1	19.9		ng/L		132	61 - 148
Perfluoro-3-methoxypropanoic acid	8.00	7.68		ng/L		96	48 - 150
Perfluoro(4-methoxybutanoic acid)	8.00	7.32		ng/L		92	49 - 154
Perfluoro-3,6-dioxaheptanoic acid	8.00	7.65		ng/L		96	47 - 160
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	14.9	18.3		ng/L		123	44 - 167
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	15.1	15.8		ng/L		105	36 - 158
PFEESA	7.12	7.52		ng/L		106	56 - 144
3:3 FTCA	20.0	20.8		ng/L		104	32 - 161
5:3 FTCA	100	112		ng/L		111	39 - 156
7:3 FTCA	100	108		ng/L		108	36 - 149

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C4 PFBA	72.5		10 - 130
13C5 PFPeA	87.8		40 - 150
13C5 PFHxA	78.4		40 - 150
13C4 PFHpA	77.3		40 - 150
13C8 PFOA	67.4		30 - 140
13C9 PFNA	80.6		30 - 140
13C6 PFDA	85.8		20 - 140
13C7 PFUnA	80.0		20 - 140
13C2-PFDoDA	75.7		10 - 150
13C2 PFTeDA	73.8		10 - 130
13C3 PFBS	78.1		25 - 150
13C3 PFHxS	76.1		25 - 150
13C8 PFOS	84.0		20 - 140
13C8 FOSA	85.8		10 - 130
d3-NMeFOSAA	82.2		10 - 200
d5-NEtFOSAA	80.0		10 - 200
M2-4:2 FTS	79.1		25 - 200
M2-6:2 FTS	86.1		25 - 200
M2-8:2 FTS	80.6		25 - 200
13C3 HFPO-DA	68.7		25 - 160
d7-N-MeFOSE-M	76.9		10 - 150
d9-N-EtFOSE-M	74.8		10 - 150
d5-NEtPFOSA	59.6		10 - 130
d3-NMePFOSA	58.1		10 - 130

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 410-449653/4
Matrix: Water
Analysis Batch: 449653

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	500	ug/L			11/30/23 13:27	1
TOC Result 1	ND		1000	500	ug/L			11/30/23 13:27	1
TOC Result 2	ND		1000	500	ug/L			11/30/23 13:27	1
TOC Result 3	ND		1000	500	ug/L			11/30/23 13:27	1
TOC Result 4	ND		1000	500	ug/L			11/30/23 13:27	1

Lab Sample ID: LCS 410-449653/3
Matrix: Water
Analysis Batch: 449653

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	25000	25000		ug/L		100	91 - 113

Lab Sample ID: 410-152590-1 MS
Matrix: Groundwater
Analysis Batch: 449653

Client Sample ID: Outfall-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	6900		10000	16500		ug/L		96	91 - 113

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 410-152590-1 MSD
Matrix: Groundwater
Analysis Batch: 449653

Client Sample ID: Outfall-001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	6900		10000	16100		ug/L		92	91 - 113	2	20

GC/MS Semi VOA

Prep Batch: 449388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-1	Outfall-001	Total/NA	Groundwater	3510C	
410-152590-2	Outfall-002	Total/NA	Groundwater	3510C	
410-152590-3	Outfall-01A	Total/NA	Groundwater	3510C	
410-152590-4	Outfall-001	Total/NA	Groundwater	3510C	
410-152590-5	Outfall-002	Total/NA	Groundwater	3510C	
410-152590-6	Outfall-01A	Total/NA	Groundwater	3510C	
MB 410-449388/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-449388/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 449585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-449388/1-A	Method Blank	Total/NA	Water	8270E SIM	449388
LCS 410-449388/2-A	Lab Control Sample	Total/NA	Water	8270E SIM	449388

Analysis Batch: 449591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-1	Outfall-001	Total/NA	Groundwater	8270E SIM	449388
410-152590-2	Outfall-002	Total/NA	Groundwater	8270E SIM	449388
410-152590-3	Outfall-01A	Total/NA	Groundwater	8270E SIM	449388
410-152590-4	Outfall-001	Total/NA	Groundwater	8270E SIM	449388
410-152590-5	Outfall-002	Total/NA	Groundwater	8270E SIM	449388
410-152590-6	Outfall-01A	Total/NA	Groundwater	8270E SIM	449388

LCMS

Prep Batch: 449184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-1	Outfall-001	Total/NA	Groundwater	1633	
410-152590-2	Outfall-002	Total/NA	Groundwater	1633	
410-152590-3 - DL	Outfall-01A	Total/NA	Groundwater	1633	
410-152590-3	Outfall-01A	Total/NA	Groundwater	1633	
410-152590-4	Outfall-001	Total/NA	Groundwater	1633	
410-152590-5	Outfall-002	Total/NA	Groundwater	1633	
410-152590-6	Outfall-01A	Total/NA	Groundwater	1633	
MB 410-449184/1-A	Method Blank	Total/NA	Water	1633	
LCS 410-449184/2-A	Lab Control Sample	Total/NA	Water	1633	
LLCS 410-449184/3-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 451638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-1	Outfall-001	Total/NA	Groundwater	Draft-4 1633	449184
410-152590-2	Outfall-002	Total/NA	Groundwater	Draft-4 1633	449184
410-152590-3	Outfall-01A	Total/NA	Groundwater	Draft-4 1633	449184
410-152590-4	Outfall-001	Total/NA	Groundwater	Draft-4 1633	449184
410-152590-5	Outfall-002	Total/NA	Groundwater	Draft-4 1633	449184
410-152590-6	Outfall-01A	Total/NA	Groundwater	Draft-4 1633	449184
MB 410-449184/1-A	Method Blank	Total/NA	Water	Draft-4 1633	449184
LCS 410-449184/2-A	Lab Control Sample	Total/NA	Water	Draft-4 1633	449184
LLCS 410-449184/3-A	Lab Control Sample	Total/NA	Water	Draft-4 1633	449184

QC Association Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

LCMS

Analysis Batch: 452669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-3 - DL	Outfall-01A	Total/NA	Groundwater	Draft-4 1633	449184

General Chemistry

Analysis Batch: 448612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-1	Outfall-001	Total/NA	Groundwater	1633 DRAFT	
410-152590-2	Outfall-002	Total/NA	Groundwater	1633 DRAFT	
410-152590-3	Outfall-01A	Total/NA	Groundwater	1633 DRAFT	
410-152590-4	Outfall-001	Total/NA	Groundwater	1633 DRAFT	
410-152590-5	Outfall-002	Total/NA	Groundwater	1633 DRAFT	
410-152590-6	Outfall-01A	Total/NA	Groundwater	1633 DRAFT	

Analysis Batch: 449653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152590-1	Outfall-001	Total/NA	Groundwater	9060A	
410-152590-2	Outfall-002	Total/NA	Groundwater	9060A	
410-152590-3	Outfall-01A	Total/NA	Groundwater	9060A	
410-152590-4	Outfall-001	Total/NA	Groundwater	9060A	
410-152590-5	Outfall-002	Total/NA	Groundwater	9060A	
410-152590-6	Outfall-01A	Total/NA	Groundwater	9060A	
MB 410-449653/4	Method Blank	Total/NA	Water	9060A	
LCS 410-449653/3	Lab Control Sample	Total/NA	Water	9060A	
410-152590-1 MS	Outfall-001	Total/NA	Groundwater	9060A	
410-152590-1 MSD	Outfall-001	Total/NA	Groundwater	9060A	

Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152590-1

Client Sample ID: Outfall-001

Lab Sample ID: 410-152590-1

Date Collected: 11/27/23 12:10

Matrix: Groundwater

Date Received: 11/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449388	QKX3	ELLE	12/02/23 07:54
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 09:36
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 12:26
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449653	P684	ELLE	11/30/23 14:05

Client Sample ID: Outfall-002

Lab Sample ID: 410-152590-2

Date Collected: 11/27/23 14:05

Matrix: Groundwater

Date Received: 11/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449388	QKX3	ELLE	12/02/23 07:54
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 09:59
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 12:39
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449653	P684	ELLE	11/30/23 15:59

Client Sample ID: Outfall-01A

Lab Sample ID: 410-152590-3

Date Collected: 11/27/23 11:45

Matrix: Groundwater

Date Received: 11/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449388	QKX3	ELLE	12/02/23 07:54
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 10:21
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 12:52
Total/NA	Prep	1633	DL		449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633	DL	10	452669	UUV6	ELLE	12/11/23 21:15
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449653	P684	ELLE	11/30/23 16:37

Client Sample ID: Outfall-001

Lab Sample ID: 410-152590-4

Date Collected: 11/28/23 10:50

Matrix: Groundwater

Date Received: 11/28/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449388	QKX3	ELLE	12/02/23 07:54
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 10:43
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 13:05
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449653	P684	ELLE	11/30/23 17:15

Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152590-1

Client Sample ID: Outfall-002

Date Collected: 11/28/23 10:20
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-5

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449388	QKX3	ELLE	12/02/23 07:54
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 11:06
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 13:18
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449653	P684	ELLE	11/30/23 17:53

Client Sample ID: Outfall-01A

Date Collected: 11/28/23 09:50
Date Received: 11/28/23 20:00

Lab Sample ID: 410-152590-6

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449388	QKX3	ELLE	12/02/23 07:54
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 11:28
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 13:31
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449653	P684	ELLE	11/30/23 18:31

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10670	04-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1633 DRAFT		Groundwater	Total Suspended Solids
Draft-4 1633	1633	Groundwater	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)
Draft-4 1633	1633	Groundwater	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol
Draft-4 1633	1633	Groundwater	2-(N-methylperfluoro-1-octanesulfonamido) ethanol
Draft-4 1633	1633	Groundwater	3:3 FTCA
Draft-4 1633	1633	Groundwater	5:3 FTCA
Draft-4 1633	1633	Groundwater	7:3 FTCA
Draft-4 1633	1633	Groundwater	NEtFOSAA
Draft-4 1633	1633	Groundwater	N-ethylperfluoro-1-octanesulfonamide
Draft-4 1633	1633	Groundwater	NMeFOSA
Draft-4 1633	1633	Groundwater	Perfluorodecanesulfonic acid
Draft-4 1633	1633	Groundwater	Perfluorododecanesulfonic acid (PFDoS)
Draft-4 1633	1633	Groundwater	Perfluoroheptanoic acid
Draft-4 1633	1633	Groundwater	Perfluorononanesulfonic acid
Draft-4 1633	1633	Groundwater	Perfluorooctanesulfonamide
Draft-4 1633	1633	Groundwater	PFEESA

Method Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Method	Method Description	Protocol	Laboratory
8270E SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
Draft-4 1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	ELLE
1633 DRAFT	Percent Suspend Solids for Analysis PFAS in Aqueous Samples by LC/MS	EPA	ELLE
9060A	Organic Carbon, Total (TOC)	SW846	ELLE
1633	Solid-Phase Extraction (SPE)	EPA	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE

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:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152590-1
Project/Site: EMGPRP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-152590-1	Outfall-001	Groundwater	11/27/23 12:10	11/28/23 20:00
410-152590-2	Outfall-002	Groundwater	11/27/23 14:05	11/28/23 20:00
410-152590-3	Outfall-01A	Groundwater	11/27/23 11:45	11/28/23 20:00
410-152590-4	Outfall-001	Groundwater	11/28/23 10:50	11/28/23 20:00
410-152590-5	Outfall-002	Groundwater	11/28/23 10:20	11/28/23 20:00
410-152590-6	Outfall-01A	Groundwater	11/28/23 09:50	11/28/23 20:00

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Chain of Custody Record

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410-152590 Chain of Custody

Client Information	Sampler: Drew Kuehlen	Lab PM: Moeller, Megan	Carrier Tracking No(s):	COC No: 410-103022-29457 1
Client Contact: Natalia Barragan-Valderrama	Phone: 5169499613	E-Mail: Megan Moeller@et eurofinsus com	State of Origin:	Page: Page 1 of 1
Company: Roux Environmental Eng & Geology DPC	PWSID:			Job #:
Address: 209 Shafter St	Due Date Requested:			
City: Islandia	TAT Requested (days): RUSH-ASAP			
State, Zip: NY, 11749	Compliance Project: Δ Yes Δ No			
Phone: 281-355-3653(Tel)	PO #: 0172 0030Y093			
Email: nbarragan@rouxinc com	WO #:			
Project Name: EMG&RC	Project #: 41000909			
Site: New York	SSOW#:			

Analysis Requested

Preservation Codes:

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270E_SIM - 1,4 Dioxane SIM	1633 - PFAS 1633	9060A - TOC	1633_Draft+TSS - TSS for Analysis PFAS 1633	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
OUTFALL-001	11/27/23	1210	G	W			X	X	X	X	7	
OUTFALL-002	11/27/23	1405	G	W			X	X	X	X	7	
OUTFALL-01A	11/27/23	1145	G	W			X	X	X	X	7	
OUTFALL-001	11/28/23	1050	G	W			X	X	X	X	7	
OUTFALL-002	11/28/23	1020	G	W			X	X	X	X	7	
OUTFAL-01A	11/28/23	0950	G	W			X	X	X	X	7	

Possible Hazard Identification

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

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

	Date/Time	Company		Date/Time	Company
Relinquished by:	11/28/23 1500	Roux	Received by: Clarence Williams	11/28/23 1500	EHE
Relinquished by: Clarence Williams	11/28/23 2005	EHE	Received by:		
Relinquished by:			Received by:	11/28/23 2000	eurofins

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.6-3.3/2.7-3.4

Ver 06/08/2021

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-152590-1

Login Number: 152590
List Number: 1
Creator: Wrye, Shaun

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is 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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Matthew Mueller
Roux Environmental Eng & Geology DPC
209 Shafter St
Islandia, New York 11749

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JOB DESCRIPTION

EMGPRP

JOB NUMBER

410-152759-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

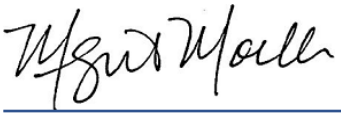
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Revision 1

Authorized for release by
Megan Moeller, Client Services Manager
Megan.Moeller@et.eurofinsus.com
(717)556-7261

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

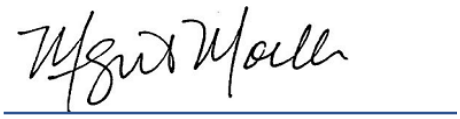

Table of Contents

Definitions/Glossary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Qualifiers

LCMS

Qualifier	Qualifier Description
I	Value is EMPC (estimated maximum possible concentration).
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: 410-152759-1 — Eurofins Lancaster Laboratories Environment

Job Narrative
410-152759-1

REVISION

The report being provided is a revision of the original report sent on 12/12/2023. The report (revision 1) is being revised due to add a comment regarding the meaning of the I qualifier for PFAS analysis.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/29/2023 5:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.4°C

Receipt Exceptions
Backup volume for 1633 method was placed in freezer on 11/29/2023.

The following samples were received at the laboratory outside the required temperature criteria: Outfall-01A (410-152759-1), Outfall-001 (410-152759-2) and Outfall-002 (410-152759-3). The sample(s) is considered acceptable since it was collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

For the PFAS analysis 410-152759, the I qualifier on the report is used to identify compounds which did not meet the ion ratio criteria.

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

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

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

Detection Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152759-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.45		0.32	0.11	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	12		7.5	1.9	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	29		3.7	0.93	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	40		1.9	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	26		1.9	0.49	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	100		1.9	0.60	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	7.8		1.9	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	0.95	J	1.9	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	34	I	1.9	0.28	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	3.1	I	1.9	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	8.1		1.9	0.53	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	8.4		1.9	0.47	ng/L	1		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	32		7.5	2.3	ng/L	1		Draft-4 1633	Total/NA
NEtFOSAA	0.74	J	1.9	0.65	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.8	J	9.3	1.4	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	70		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	6600		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	6400		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	6600		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	6600		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	6700		1000	500	ug/L	1		9060A	Total/NA

Client Sample ID: Outfall-001
Lab Sample ID: 410-152759-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.46		0.30	0.10	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	9.1		7.2	1.8	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	30		3.6	0.90	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	44	I	1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	26		1.8	0.47	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	110	I	1.8	0.58	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	7.6		1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	1.1	J	1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluoroundecanoic acid	0.78	J	1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	41	I	1.8	0.27	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	2.1	I	1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	8.0		1.8	0.52	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanesulfonic acid	0.45	J I	1.8	0.36	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	8.6		1.8	0.45	ng/L	1		Draft-4 1633	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	33		7.2	2.3	ng/L	1		Draft-4 1633	Total/NA
NEtFOSAA	0.79	J	1.8	0.63	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.3	J	9.0	1.4	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	60		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	6500		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	6200		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	6600		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	6500		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	6700		1000	500	ug/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Client Sample ID: Outfall-002
Lab Sample ID: 410-152759-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.77		0.32	0.11	ug/L	1		8270E SIM	Total/NA
Perfluorobutanoic acid	27		7.4	1.8	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanoic acid	33		3.7	0.92	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanoic acid	47		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanoic acid	53		1.8	0.48	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanoic acid	120		1.8	0.59	ng/L	1		Draft-4 1633	Total/NA
Perfluorononanoic acid	85		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluorodecanoic acid	5.2		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluoroundecanoic acid	8.0		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluorobutanesulfonic acid	5.1		1.8	0.28	ng/L	1		Draft-4 1633	Total/NA
Perfluoropentanesulfonic acid	1.9		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
Perfluorohexanesulfonic acid	11		1.8	0.53	ng/L	1		Draft-4 1633	Total/NA
Perfluoroheptanesulfonic acid	0.47	J	1.8	0.37	ng/L	1		Draft-4 1633	Total/NA
Perfluorooctanesulfonic acid	10		1.8	0.46	ng/L	1		Draft-4 1633	Total/NA
3:3 FTCA	2.1	J	9.2	1.4	ng/L	1		Draft-4 1633	Total/NA
Total Suspended Solids	70		3.0	3.0	mg/L	1		1633 DRAFT	Total/NA
Total Organic Carbon	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 1	3100		1000	500	ug/L	1		9060A	Total/NA
TOC Result 2	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 3	3300		1000	500	ug/L	1		9060A	Total/NA
TOC Result 4	3400		1000	500	ug/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152759-1

Date Collected: 11/29/23 07:45
Matrix: Groundwater

Date Received: 11/29/23 17:45

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.45		0.32	0.11	ug/L		12/01/23 15:12	12/04/23 08:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*44*		*17 - 120*	*12/01/23 15:12*	*12/04/23 08:07*	*1*
Fluoranthene-d10 (Surr)	*88*		*43 - 124*	*12/01/23 15:12*	*12/04/23 08:07*	*1*
1-Methylnaphthalene-d10 (Surr)	*104*		*33 - 120*	*12/01/23 15:12*	*12/04/23 08:07*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	12		7.5	1.9	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoropentanoic acid	29		3.7	0.93	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorohexanoic acid	40		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoroheptanoic acid	26		1.9	0.49	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorooctanoic acid	100		1.9	0.60	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorononanoic acid	7.8		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorodecanoic acid	0.95	J	1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoroundecanoic acid	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorododecanoic acid	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorotridecanoic acid	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorotetradecanoic acid	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorobutanesulfonic acid	34	I	1.9	0.28	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoropentanesulfonic acid	3.1	I	1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorohexanesulfonic acid	8.1		1.9	0.53	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoroheptanesulfonic acid	ND		1.9	0.37	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorooctanesulfonic acid	8.4		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorononanesulfonic acid	ND		1.9	0.37	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorodecanesulfonic acid	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.9	0.84	ng/L		12/01/23 15:25	12/08/23 13:44	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.5	1.6	ng/L		12/01/23 15:25	12/08/23 13:44	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	32		7.5	2.3	ng/L		12/01/23 15:25	12/08/23 13:44	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.5	2.4	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluorooctanesulfonamide	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
NMeFOSA	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.9	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
NMeFOSAA	ND		3.7	1.1	ng/L		12/01/23 15:25	12/08/23 13:44	1
NEtFOSAA	0.74	J	1.9	0.65	ng/L		12/01/23 15:25	12/08/23 13:44	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.7	ng/L		12/01/23 15:25	12/08/23 13:44	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		19	4.7	ng/L		12/01/23 15:25	12/08/23 13:44	1
HFPO-DA	ND		7.5	1.9	ng/L		12/01/23 15:25	12/08/23 13:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.5	1.4	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoro-3-methoxypropanoic acid	ND		3.7	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoro(4-methoxybutanoic acid)	ND		3.7	0.93	ng/L		12/01/23 15:25	12/08/23 13:44	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.7	0.93	ng/L		12/01/23 15:25	12/08/23 13:44	1

Client Sample ID: Outfall-01A
Lab Sample ID: 410-152759-1
Date Collected: 11/29/23 07:45
Matrix: Groundwater
Date Received: 11/29/23 17:45

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.5	0.93	ng/L		12/01/23 15:25	12/08/23 13:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.5	1.9	ng/L		12/01/23 15:25	12/08/23 13:44	1
PFEESA	ND		3.7	0.47	ng/L		12/01/23 15:25	12/08/23 13:44	1
3:3 FTCA	**2.8**	**J**	9.3	1.4	ng/L		12/01/23 15:25	12/08/23 13:44	1
5:3 FTCA	ND		47	9.3	ng/L		12/01/23 15:25	12/08/23 13:44	1
7:3 FTCA	ND		47	9.3	ng/L		12/01/23 15:25	12/08/23 13:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*26.5*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C5 PFPeA	*50.6*		*35 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C5 PFHxA	*56.9*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C4 PFHpA	*63.0*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C8 PFOA	*64.8*		*60 - 140*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C9 PFNA	*77.4*		*55 - 140*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C6 PFDA	*81.7*		*50 - 140*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C7 PFUnA	*74.0*		*30 - 140*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C2-PFDoDA	*66.9*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C2 PFTeDA	*43.8*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C3 PFBS	*111*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C3 PFHxS	*85.3*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C8 PFOS	*76.5*		*45 - 140*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C8 FOSA	*89.0*		*30 - 130*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
d3-NMeFOSAA	*74.5*		*45 - 200*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
d5-NEtFOSAA	*74.9*		*10 - 200*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
M2-4:2 FTS	*149*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
M2-6:2 FTS	*123*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
M2-8:2 FTS	*156*		*50 - 200*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
13C3 HFPO-DA	*46.3*		*25 - 160*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
d7-N-MeFOSE-M	*52.5*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
d9-N-EtFOSE-M	*44.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
d5-NEtPFOSA	*50.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:44*	*1*
d3-NMePFOSA	*55.8*		*15 - 130*	*12/01/23 15:25*	*12/08/23 13:44*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**70**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**6600**		1000	500	ug/L			12/01/23 23:05	1
TOC Result 1 (SW846 9060A)	**6400**		1000	500	ug/L			12/01/23 23:05	1
TOC Result 2 (SW846 9060A)	**6600**		1000	500	ug/L			12/01/23 23:05	1
TOC Result 3 (SW846 9060A)	**6600**		1000	500	ug/L			12/01/23 23:05	1
TOC Result 4 (SW846 9060A)	**6700**		1000	500	ug/L			12/01/23 23:05	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152759-1

Client Sample ID: Outfall-001

Date Collected: 11/29/23 08:00
Date Received: 11/29/23 17:45

Lab Sample ID: 410-152759-2

Matrix: Groundwater

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.46**		0.30	0.10	ug/L		12/01/23 15:12	12/04/23 08:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*44*		*17 - 120*	*12/01/23 15:12*	*12/04/23 08:29*	*1*
Fluoranthene-d10 (Surr)	*90*		*43 - 124*	*12/01/23 15:12*	*12/04/23 08:29*	*1*
1-Methylnaphthalene-d10 (Surr)	*107*		*33 - 120*	*12/01/23 15:12*	*12/04/23 08:29*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**9.1**		7.2	1.8	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoropentanoic acid	**30**		3.6	0.90	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorohexanoic acid	**44**	**I**	1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoroheptanoic acid	**26**		1.8	0.47	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorooctanoic acid	**110**	**I**	1.8	0.58	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorononanoic acid	**7.6**		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorodecanoic acid	**1.1**	**J**	1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoroundecanoic acid	**0.78**	**J**	1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorododecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorotridecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorotetradecanoic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorobutanesulfonic acid	**41**	**I**	1.8	0.27	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoropentanesulfonic acid	**2.1**	**I**	1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorohexanesulfonic acid	**8.0**		1.8	0.52	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoroheptanesulfonic acid	**0.45**	**J I**	1.8	0.36	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorooctanesulfonic acid	**8.6**		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorononanesulfonic acid	ND		1.8	0.36	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorodecanesulfonic acid	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8	0.81	ng/L		12/01/23 15:25	12/08/23 13:57	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.2	1.5	ng/L		12/01/23 15:25	12/08/23 13:57	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	**33**		7.2	2.3	ng/L		12/01/23 15:25	12/08/23 13:57	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.2	2.4	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluorooctanesulfonamide	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
NMeFOSA	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.8	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
NMeFOSAA	ND		3.6	1.1	ng/L		12/01/23 15:25	12/08/23 13:57	1
NEtFOSAA	**0.79**	**J**	1.8	0.63	ng/L		12/01/23 15:25	12/08/23 13:57	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.5	ng/L		12/01/23 15:25	12/08/23 13:57	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.5	ng/L		12/01/23 15:25	12/08/23 13:57	1
HFPO-DA	ND		7.2	1.8	ng/L		12/01/23 15:25	12/08/23 13:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.2	1.4	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoro-3-methoxypropanoic acid	ND		3.6	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoro(4-methoxybutanoic acid)	ND		3.6	0.90	ng/L		12/01/23 15:25	12/08/23 13:57	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.6	0.90	ng/L		12/01/23 15:25	12/08/23 13:57	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152759-1

Client Sample ID: Outfall-001
Date Collected: 11/29/23 08:00
Date Received: 11/29/23 17:45

Lab Sample ID: 410-152759-2
Matrix: Groundwater

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.2	0.90	ng/L		12/01/23 15:25	12/08/23 13:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.2	1.8	ng/L		12/01/23 15:25	12/08/23 13:57	1
PFEESA	ND		3.6	0.45	ng/L		12/01/23 15:25	12/08/23 13:57	1
3:3 FTCA	**2.3**	**J**	9.0	1.4	ng/L		12/01/23 15:25	12/08/23 13:57	1
5:3 FTCA	ND		45	9.0	ng/L		12/01/23 15:25	12/08/23 13:57	1
7:3 FTCA	ND		45	9.0	ng/L		12/01/23 15:25	12/08/23 13:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*27.7*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C5 PFPeA	*49.0*		*35 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C5 PFHxA	*55.1*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C4 PFHpA	*61.6*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C8 PFOA	*72.0*		*60 - 140*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C9 PFNA	*75.5*		*55 - 140*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C6 PFDA	*76.2*		*50 - 140*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C7 PFUnA	*70.9*		*30 - 140*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C2-PFDoDA	*60.7*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C2 PFTeDA	*49.9*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C3 PFBS	*111*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C3 PFHxS	*81.8*		*55 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C8 PFOS	*77.6*		*45 - 140*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C8 FOSA	*95.3*		*30 - 130*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
d3-NMeFOSAA	*68.8*		*45 - 200*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
d5-NEtFOSAA	*70.4*		*10 - 200*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
M2-4:2 FTS	*121*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
M2-6:2 FTS	*118*		*60 - 200*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
M2-8:2 FTS	*157*		*50 - 200*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
13C3 HFPO-DA	*47.3*		*25 - 160*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
d7-N-MeFOSE-M	*57.6*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
d9-N-EtFOSE-M	*52.9*		*10 - 150*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
d5-NEtPFOSA	*44.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 13:57*	*1*
d3-NMePFOSA	*52.2*		*15 - 130*	*12/01/23 15:25*	*12/08/23 13:57*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**60**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**6500**		1000	500	ug/L			12/01/23 23:43	1
TOC Result 1 (SW846 9060A)	**6200**		1000	500	ug/L			12/01/23 23:43	1
TOC Result 2 (SW846 9060A)	**6600**		1000	500	ug/L			12/01/23 23:43	1
TOC Result 3 (SW846 9060A)	**6500**		1000	500	ug/L			12/01/23 23:43	1
TOC Result 4 (SW846 9060A)	**6700**		1000	500	ug/L			12/01/23 23:43	1

Client Sample ID: Outfall-002
Lab Sample ID: 410-152759-3
Date Collected: 11/29/23 08:30
Matrix: Groundwater
Date Received: 11/29/23 17:45

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.77		0.32	0.11	ug/L		12/01/23 15:12	12/04/23 08:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*42*		*17 - 120*	*12/01/23 15:12*	*12/04/23 08:52*	*1*
Fluoranthene-d10 (Surr)	*99*		*43 - 124*	*12/01/23 15:12*	*12/04/23 08:52*	*1*
1-Methylnaphthalene-d10 (Surr)	*92*		*33 - 120*	*12/01/23 15:12*	*12/04/23 08:52*	*1*

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	27		7.4	1.8	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoropentanoic acid	33		3.7	0.92	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorohexanoic acid	47		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoroheptanoic acid	53		1.8	0.48	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorooctanoic acid	120		1.8	0.59	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorononanoic acid	85		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorodecanoic acid	5.2		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoroundecanoic acid	8.0		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorododecanoic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorotridecanoic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorotetradecanoic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorobutanesulfonic acid	5.1		1.8	0.28	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoropentanesulfonic acid	1.9		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorohexanesulfonic acid	11		1.8	0.53	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoroheptanesulfonic acid	0.47	J	1.8	0.37	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorooctanesulfonic acid	10		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorononanesulfonic acid	ND		1.8	0.37	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorodecanesulfonic acid	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorododecanesulfonic acid (PFDoS)	ND		1.8	0.83	ng/L		12/01/23 15:25	12/08/23 14:37	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		7.4	1.6	ng/L		12/01/23 15:25	12/08/23 14:37	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		7.4	2.3	ng/L		12/01/23 15:25	12/08/23 14:37	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		7.4	2.4	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluorooctanesulfonamide	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
NMeFOSA	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
N-ethylperfluoro-1-octanesulfonamide	ND		1.8	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
NMeFOSAA	ND		3.7	1.1	ng/L		12/01/23 15:25	12/08/23 14:37	1
NEtFOSAA	ND		1.8	0.65	ng/L		12/01/23 15:25	12/08/23 14:37	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.6	ng/L		12/01/23 15:25	12/08/23 14:37	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		18	4.6	ng/L		12/01/23 15:25	12/08/23 14:37	1
HFPO-DA	ND		7.4	1.8	ng/L		12/01/23 15:25	12/08/23 14:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		7.4	1.4	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoro-3-methoxypropanoic acid	ND		3.7	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoro(4-methoxybutanoic acid)	ND		3.7	0.92	ng/L		12/01/23 15:25	12/08/23 14:37	1
Perfluoro-3,6-dioxaheptanoic acid	ND		3.7	0.92	ng/L		12/01/23 15:25	12/08/23 14:37	1

Client Sample ID: Outfall-002
Lab Sample ID: 410-152759-3
Date Collected: 11/29/23 08:30
Matrix: Groundwater
Date Received: 11/29/23 17:45

Method: EPA Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		7.4	0.92	ng/L		12/01/23 15:25	12/08/23 14:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		7.4	1.8	ng/L		12/01/23 15:25	12/08/23 14:37	1
PFEESA	ND		3.7	0.46	ng/L		12/01/23 15:25	12/08/23 14:37	1
3:3 FTCA	**2.1**	**J**	9.2	1.4	ng/L		12/01/23 15:25	12/08/23 14:37	1
5:3 FTCA	ND		46	9.2	ng/L		12/01/23 15:25	12/08/23 14:37	1
7:3 FTCA	ND		46	9.2	ng/L		12/01/23 15:25	12/08/23 14:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*41.5*		*10 - 130*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C5 PFPeA	*65.0*		*35 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C5 PFHxA	*71.3*		*55 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C4 PFHpA	*75.2*		*55 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C8 PFOA	*72.6*		*60 - 140*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C9 PFNA	*76.1*		*55 - 140*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C6 PFDA	*76.5*		*50 - 140*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C7 PFUnA	*66.9*		*30 - 140*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C2-PFDoDA	*62.2*		*10 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C2 PFTeDA	*53.1*		*10 - 130*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C3 PFBS	*84.6*		*55 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C3 PFHxS	*76.8*		*55 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C8 PFOS	*77.0*		*45 - 140*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C8 FOSA	*79.9*		*30 - 130*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
d3-NMeFOSAA	*72.6*		*45 - 200*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
d5-NEtFOSAA	*66.2*		*10 - 200*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
M2-4:2 FTS	*133*		*60 - 200*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
M2-6:2 FTS	*117*		*60 - 200*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
M2-8:2 FTS	*96.4*		*50 - 200*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
13C3 HFPO-DA	*61.8*		*25 - 160*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
d7-N-MeFOSE-M	*55.4*		*10 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
d9-N-EtFOSE-M	*55.7*		*10 - 150*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
d5-NEtPFOSA	*44.6*		*10 - 130*	*12/01/23 15:25*	*12/08/23 14:37*	*1*
d3-NMePFOSA	*47.7*		*15 - 130*	*12/01/23 15:25*	*12/08/23 14:37*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (EPA 1633 DRAFT)	**70**		3.0	3.0	mg/L			11/30/23 12:28	1
Total Organic Carbon (SW846 9060A)	**3300**		1000	500	ug/L			12/02/23 00:22	1
TOC Result 1 (SW846 9060A)	**3100**		1000	500	ug/L			12/02/23 00:22	1
TOC Result 2 (SW846 9060A)	**3300**		1000	500	ug/L			12/02/23 00:22	1
TOC Result 3 (SW846 9060A)	**3300**		1000	500	ug/L			12/02/23 00:22	1
TOC Result 4 (SW846 9060A)	**3400**		1000	500	ug/L			12/02/23 00:22	1

Surrogate Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	FLN10	MNPd10
Lab Sample ID	Client Sample ID	(17-120)	(43-124)	(33-120)
410-152759-1	Outfall-01A	44	88	104
410-152759-2	Outfall-001	44	90	107
410-152759-3	Outfall-002	42	99	92

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
FLN10 = Fluoranthene-d10 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	FLN10	MNPd10
Lab Sample ID	Client Sample ID	(17-120)	(43-124)	(33-120)
LCS 410-449175/2-A	Lab Control Sample	105	96	94
LCSD 410-449175/3-A	Lab Control Sample Dup	108	99	102
MB 410-449175/1-A	Method Blank	83	103	90

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
FLN10 = Fluoranthene-d10 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Groundwater

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(10-130)	(35-150)	(55-150)	(55-150)	(60-140)	(55-140)	(50-140)	(30-140)
410-152759-1	Outfall-01A	26.5	50.6	56.9	63.0	64.8	77.4	81.7	74.0
410-152759-2	Outfall-001	27.7	49.0	55.1	61.6	72.0	75.5	76.2	70.9
410-152759-3	Outfall-002	41.5	65.0	71.3	75.2	72.6	76.1	76.5	66.9

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(10-150)	(10-130)	(55-150)	(55-150)	(45-140)	(30-130)	(45-200)	(10-200)
410-152759-1	Outfall-01A	66.9	43.8	111	85.3	76.5	89.0	74.5	74.9
410-152759-2	Outfall-001	60.7	49.9	111	81.8	77.6	95.3	68.8	70.4
410-152759-3	Outfall-002	62.2	53.1	84.6	76.8	77.0	79.9	72.6	66.2

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(60-200)	(60-200)	(50-200)	(25-160)	(10-150)	(10-150)	(10-130)	(15-130)
410-152759-1	Outfall-01A	149	123	156	46.3	52.5	44.4	50.6	55.8
410-152759-2	Outfall-001	121	118	157	47.3	57.6	52.9	44.6	52.2
410-152759-3	Outfall-002	133	117	96.4	61.8	55.4	55.7	44.6	47.7

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(10-130)	(40-150)	(40-150)	(40-150)	(30-140)	(30-140)	(20-140)	(20-140)
LCS 410-449184/2-A	Lab Control Sample	70.6	80.5	77.7	77.1	68.4	77.6	82.3	78.3
LLCS 410-449184/3-A	Lab Control Sample	72.5	87.8	78.4	77.3	67.4	80.6	85.8	80.0

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(10-150)	(10-130)	(25-150)	(25-150)	(20-140)	(10-130)	(10-200)	(10-200)
LCS 410-449184/2-A	Lab Control Sample	74.4	69.1	81.9	75.9	80.4	83.4	78.9	72.3
LLCS 410-449184/3-A	Lab Control Sample	75.7	73.8	78.1	76.1	84.0	85.8	82.2	80.0

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(25-200)	(25-200)	(25-200)	(25-160)	(10-150)	(10-150)	(10-130)	(10-130)
LCS 410-449184/2-A	Lab Control Sample	87.5	90.3	84.2	72.3	68.6	68.3	59.0	59.4
LLCS 410-449184/3-A	Lab Control Sample	79.1	86.1	80.6	68.7	76.9	74.8	59.6	58.1

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(10-130)	(35-150)	(55-150)	(55-150)	(60-140)	(55-140)	(50-140)	(30-140)
MB 410-449184/1-A	Method Blank	65.9	68.6	63.2	63.2	68.4	76.4	78.1	71.6

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(10-150)	(10-130)	(55-150)	(55-150)	(45-140)	(30-130)	(45-200)	(10-200)
MB 410-449184/1-A	Method Blank	68.8	65.9	73.8	68.5	75.0	79.2	75.6	70.7

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(60-200)	(60-200)	(50-200)	(25-160)	(10-150)	(10-150)	(10-130)	(15-130)
MB 410-449184/1-A	Method Blank	76.0	77.4	75.9	62.5	69.6	69.5	53.6	57.9

Surrogate Legend

Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-449175/1-A
Matrix: Water
Analysis Batch: 449585

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449175

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.30	0.10	ug/L		12/01/23 15:12	12/04/23 05:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*83*		*17 - 120*	*12/01/23 15:12*	*12/04/23 05:58*	*1*
Fluoranthene-d10 (Surr)	*103*		*43 - 124*	*12/01/23 15:12*	*12/04/23 05:58*	*1*
1-Methylnaphthalene-d10 (Surr)	*90*		*33 - 120*	*12/01/23 15:12*	*12/04/23 05:58*	*1*

Lab Sample ID: LCS 410-449175/2-A
Matrix: Water
Analysis Batch: 449585

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449175

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			1.00	0.698		ug/L		70	10 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*105*		*17 - 120*
Fluoranthene-d10 (Surr)	*96*		*43 - 124*
1-Methylnaphthalene-d10 (Surr)	*94*		*33 - 120*

Lab Sample ID: LCSD 410-449175/3-A
Matrix: Water
Analysis Batch: 449585

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 449175

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			1.00	0.646		ug/L		65	10 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*108*		*17 - 120*
Fluoranthene-d10 (Surr)	*99*		*43 - 124*
1-Methylnaphthalene-d10 (Surr)	*102*		*33 - 120*

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 410-449184/1-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	ND		8.0	2.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoropentanoic acid	ND		4.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorohexanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoroheptanoic acid	ND		2.0	0.52	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorooctanoic acid	ND		2.0	0.64	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorononanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorodecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoroundecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorododecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorotridecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-449184/1-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorobutanesulfonic acid	ND		2.0	0.30	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoropentanesulfonic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorohexanesulfonic acid	ND		2.0	0.57	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoroheptanesulfonic acid	ND		2.0	0.40	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorononanesulfonic acid	ND		2.0	0.40	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorodecanesulfonic acid	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0	0.90	ng/L		12/01/23 15:25	12/08/23 11:46	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND		8.0	1.7	ng/L		12/01/23 15:25	12/08/23 11:46	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		8.0	2.5	ng/L		12/01/23 15:25	12/08/23 11:46	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		8.0	2.6	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluorooctanesulfonamide	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
NMeFOSA	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
N-ethylperfluoro-1-octanesulfonamide	ND		2.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
NMeFOSAA	ND		4.0	1.2	ng/L		12/01/23 15:25	12/08/23 11:46	1
NEtFOSAA	ND		2.0	0.70	ng/L		12/01/23 15:25	12/08/23 11:46	1
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND		20	5.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND		20	5.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
HFPO-DA	ND		8.0	2.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		8.0	1.5	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoro-3-methoxypropanoic acid	ND		4.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoro(4-methoxybutanoic acid)	ND		4.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
Perfluoro-3,6-dioxaheptanoic acid	ND		4.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		8.0	1.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		8.0	2.0	ng/L		12/01/23 15:25	12/08/23 11:46	1
PFEESA	ND		4.0	0.50	ng/L		12/01/23 15:25	12/08/23 11:46	1
3:3 FTCA	ND		10	1.5	ng/L		12/01/23 15:25	12/08/23 11:46	1
5:3 FTCA	ND		50	10	ng/L		12/01/23 15:25	12/08/23 11:46	1
7:3 FTCA	ND		50	10	ng/L		12/01/23 15:25	12/08/23 11:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65.9*		*10 - 130*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C5 PFPeA	*68.6*		*35 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C5 PFHxA	*63.2*		*55 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C4 PFHpA	*63.2*		*55 - 150*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C8 PFOA	*68.4*		*60 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C9 PFNA	*76.4*		*55 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C6 PFDA	*78.1*		*50 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*
13C7 PFUnA	*71.6*		*30 - 140*	*12/01/23 15:25*	*12/08/23 11:46*	*1*

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-449184/1-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449184

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-PFDoDA	68.8		10 - 150	12/01/23 15:25	12/08/23 11:46	1
13C2 PFTeDA	65.9		10 - 130	12/01/23 15:25	12/08/23 11:46	1
13C3 PFBS	73.8		55 - 150	12/01/23 15:25	12/08/23 11:46	1
13C3 PFHxS	68.5		55 - 150	12/01/23 15:25	12/08/23 11:46	1
13C8 PFOS	75.0		45 - 140	12/01/23 15:25	12/08/23 11:46	1
13C8 FOSA	79.2		30 - 130	12/01/23 15:25	12/08/23 11:46	1
d3-NMeFOSAA	75.6		45 - 200	12/01/23 15:25	12/08/23 11:46	1
d5-NEtFOSAA	70.7		10 - 200	12/01/23 15:25	12/08/23 11:46	1
M2-4:2 FTS	76.0		60 - 200	12/01/23 15:25	12/08/23 11:46	1
M2-6:2 FTS	77.4		60 - 200	12/01/23 15:25	12/08/23 11:46	1
M2-8:2 FTS	75.9		50 - 200	12/01/23 15:25	12/08/23 11:46	1
13C3 HFPO-DA	62.5		25 - 160	12/01/23 15:25	12/08/23 11:46	1
d7-N-MeFOSE-M	69.6		10 - 150	12/01/23 15:25	12/08/23 11:46	1
d9-N-EtFOSE-M	69.5		10 - 150	12/01/23 15:25	12/08/23 11:46	1
d5-NEtPFOSA	53.6		10 - 130	12/01/23 15:25	12/08/23 11:46	1
d3-NMePFOSA	57.9		15 - 130	12/01/23 15:25	12/08/23 11:46	1

Lab Sample ID: LCS 410-449184/2-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	100	110		ng/L		110	58 - 148
Perfluoropentanoic acid	50.1	55.5		ng/L		111	54 - 152
Perfluorohexanoic acid	25.0	35.6		ng/L		142	55 - 152
Perfluoroheptanoic acid	25.0	29.0		ng/L		116	54 - 154
Perfluorooctanoic acid	25.0	32.3		ng/L		129	52 - 161
Perfluorononanoic acid	25.0	32.2		ng/L		128	59 - 149
Perfluorodecanoic acid	25.0	25.7		ng/L		103	52 - 147
Perfluoroundecanoic acid	25.0	24.4		ng/L		98	48 - 159
Perfluorododecanoic acid	25.0	26.8		ng/L		107	64 - 142
Perfluorotridecanoic acid	25.0	29.1		ng/L		116	49 - 148
Perfluorotetradecanoic acid	25.0	26.8		ng/L		107	47 - 161
Perfluorobutanesulfonic acid	22.2	23.3		ng/L		105	62 - 144
Perfluoropentanesulfonic acid	23.6	25.3		ng/L		107	59 - 151
Perfluorohexanesulfonic acid	22.9	25.2		ng/L		110	57 - 146
Perfluoroheptanesulfonic acid	23.9	22.4		ng/L		94	55 - 152
Perfluorooctanesulfonic acid	23.2	23.2		ng/L		100	58 - 149
Perfluorononanesulfonic acid	24.1	24.6		ng/L		102	52 - 148
Perfluorodecanesulfonic acid	24.2	23.0		ng/L		95	51 - 147
Perfluorododecanesulfonic acid (PFDoS)	24.3	24.1		ng/L		99	36 - 145
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	93.9	91.7		ng/L		98	67 - 146
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	95.2	96.7		ng/L		102	61 - 151
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	96.2	94.0		ng/L		98	63 - 152
Perfluorooctanesulfonamide	25.0	24.7		ng/L		99	61 - 148
NMeFOSA	25.0	27.1		ng/L		108	63 - 145

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152759-1

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-449184/2-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluoro-1-octanesulfonamide	25.0	28.7		ng/L		115	65 - 139
NMeFOSAA	25.0	27.8		ng/L		111	58 - 144
NEtFOSAA	25.0	29.0		ng/L		116	59 - 146
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	250	319		ng/L		127	71 - 136
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	250	272		ng/L		109	69 - 137
HFPO-DA	100	92.1		ng/L		92	63 - 144
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	94.2	99.5		ng/L		106	68 - 146
Perfluoro-3-methoxypropanoic acid	50.1	53.0		ng/L		106	51 - 145
Perfluoro(4-methoxybutanoic acid)	50.1	49.2		ng/L		98	55 - 148
Perfluoro-3,6-dioxaheptanoic acid	50.1	44.0		ng/L		88	48 - 161
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	93.2	97.1		ng/L		104	56 - 156
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	94.2	85.8		ng/L		91	46 - 156
PFEESA	44.6	47.7		ng/L		107	56 - 151
3:3 FTCA	125	132		ng/L		106	62 - 129
5:3 FTCA	626	664		ng/L		106	63 - 134
7:3 FTCA	626	626		ng/L		100	50 - 138

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*70.6*		*10 - 130*
13C5 PFPeA	*80.5*		*40 - 150*
13C5 PFHxA	*77.7*		*40 - 150*
13C4 PFHpA	*77.1*		*40 - 150*
13C8 PFOA	*68.4*		*30 - 140*
13C9 PFNA	*77.6*		*30 - 140*
13C6 PFDA	*82.3*		*20 - 140*
13C7 PFUnA	*78.3*		*20 - 140*
13C2-PFDoDA	*74.4*		*10 - 150*
13C2 PFTeDA	*69.1*		*10 - 130*
13C3 PFBS	*81.9*		*25 - 150*
13C3 PFHxS	*75.9*		*25 - 150*
13C8 PFOS	*80.4*		*20 - 140*
13C8 FOSA	*83.4*		*10 - 130*
d3-NMeFOSAA	*78.9*		*10 - 200*
d5-NEtFOSAA	*72.3*		*10 - 200*
M2-4:2 FTS	*87.5*		*25 - 200*
M2-6:2 FTS	*90.3*		*25 - 200*
M2-8:2 FTS	*84.2*		*25 - 200*
13C3 HFPO-DA	*72.3*		*25 - 160*
d7-N-MeFOSE-M	*68.6*		*10 - 150*
d9-N-EtFOSE-M	*68.3*		*10 - 150*

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-449184/2-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtPFOSA	*59.0*		*10 - 130*
d3-NMePFOSA	*59.4*		*10 - 130*

Lab Sample ID: LLCS 410-449184/3-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	16.0	18.5		ng/L		116	44 - 157
Perfluoropentanoic acid	8.00	8.98		ng/L		112	57 - 148
Perfluorohexanoic acid	4.00	4.36		ng/L		109	62 - 149
Perfluoroheptanoic acid	4.00	4.32		ng/L		108	56 - 150
Perfluorooctanoic acid	4.00	5.38		ng/L		134	57 - 161
Perfluorononanoic acid	4.00	5.31		ng/L		133	53 - 157
Perfluorodecanoic acid	4.00	4.46		ng/L		112	43 - 158
Perfluoroundecanoic acid	4.00	4.39		ng/L		110	50 - 155
Perfluorododecanoic acid	4.00	4.59		ng/L		115	60 - 141
Perfluorotridecanoic acid	4.00	4.54		ng/L		114	52 - 140
Perfluorotetradecanoic acid	4.00	4.11		ng/L		103	52 - 156
Perfluorobutanesulfonic acid	3.55	3.82		ng/L		108	63 - 145
Perfluoropentanesulfonic acid	3.76	3.95		ng/L		105	58 - 144
Perfluorohexanesulfonic acid	3.66	4.06		ng/L		111	44 - 158
Perfluoroheptanesulfonic acid	3.81	3.64		ng/L		95	51 - 150
Perfluorooctanesulfonic acid	3.71	3.80		ng/L		102	43 - 162
Perfluorononanesulfonic acid	3.85	3.95		ng/L		103	46 - 151
Perfluorodecanesulfonic acid	3.86	3.95		ng/L		102	50 - 144
Perfluorododecanesulfonic acid (PFDoS)	3.88	3.56		ng/L		92	30 - 138
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	15.0	16.2		ng/L		108	52 - 158
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	15.2	16.2		ng/L		107	48 - 158
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	15.4	17.1		ng/L		111	46 - 165
Perfluorooctanesulfonamide	4.00	3.94		ng/L		98	47 - 163
NMeFOSA	4.00	4.48		ng/L		112	54 - 155
N-ethylperfluoro-1-octanesulfonamide	4.00	4.75		ng/L		119	49 - 156
NMeFOSAA	4.00	4.54		ng/L		113	32 - 160
NEtFOSAA	4.00	4.54		ng/L		113	51 - 154
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	40.0	49.3		ng/L		123	56 - 151
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	40.0	40.7		ng/L		102	60 - 147
HFPO-DA	16.0	19.0		ng/L		119	58 - 154
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	15.1	19.9		ng/L		132	61 - 148
Perfluoro-3-methoxypropanoic acid	8.00	7.68		ng/L		96	48 - 150

Method: Draft-4 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-449184/3-A
Matrix: Water
Analysis Batch: 451638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449184

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro(4-methoxybutanoic acid)	8.00	7.32		ng/L		92	49 - 154
Perfluoro-3,6-dioxaheptanoic acid	8.00	7.65		ng/L		96	47 - 160
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	14.9	18.3		ng/L		123	44 - 167
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	15.1	15.8		ng/L		105	36 - 158
PFEESA	7.12	7.52		ng/L		106	56 - 144
3:3 FTCA	20.0	20.8		ng/L		104	32 - 161
5:3 FTCA	100	112		ng/L		111	39 - 156
7:3 FTCA	100	108		ng/L		108	36 - 149

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*72.5*		*10 - 130*
13C5 PFPeA	*87.8*		*40 - 150*
13C5 PFHxA	*78.4*		*40 - 150*
13C4 PFHpA	*77.3*		*40 - 150*
13C8 PFOA	*67.4*		*30 - 140*
13C9 PFNA	*80.6*		*30 - 140*
13C6 PFDA	*85.8*		*20 - 140*
13C7 PFUnA	*80.0*		*20 - 140*
13C2-PFDoDA	*75.7*		*10 - 150*
13C2 PFTeDA	*73.8*		*10 - 130*
13C3 PFBS	*78.1*		*25 - 150*
13C3 PFHxS	*76.1*		*25 - 150*
13C8 PFOS	*84.0*		*20 - 140*
13C8 FOSA	*85.8*		*10 - 130*
d3-NMeFOSAA	*82.2*		*10 - 200*
d5-NEtFOSAA	*80.0*		*10 - 200*
M2-4:2 FTS	*79.1*		*25 - 200*
M2-6:2 FTS	*86.1*		*25 - 200*
M2-8:2 FTS	*80.6*		*25 - 200*
13C3 HFPO-DA	*68.7*		*25 - 160*
d7-N-MeFOSE-M	*76.9*		*10 - 150*
d9-N-EtFOSE-M	*74.8*		*10 - 150*
d5-NEtPFOSA	*59.6*		*10 - 130*
d3-NMePFOSA	*58.1*		*10 - 130*

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 410-449595/4
Matrix: Water
Analysis Batch: 449595

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	500	ug/L			12/01/23 21:11	1
TOC Result 1	ND		1000	500	ug/L			12/01/23 21:11	1
TOC Result 2	ND		1000	500	ug/L			12/01/23 21:11	1
TOC Result 3	ND		1000	500	ug/L			12/01/23 21:11	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: MB 410-449595/4
Matrix: Water
Analysis Batch: 449595

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC Result 4	ND		1000	500	ug/L			12/01/23 21:11	1

Lab Sample ID: LCS 410-449595/3
Matrix: Water
Analysis Batch: 449595

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			25000	25500		ug/L		102	91 - 113		

GC/MS Semi VOA

Prep Batch: 449175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152759-1	Outfall-01A	Total/NA	Groundwater	3510C	
410-152759-2	Outfall-001	Total/NA	Groundwater	3510C	
410-152759-3	Outfall-002	Total/NA	Groundwater	3510C	
MB 410-449175/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-449175/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-449175/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 449585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-449175/1-A	Method Blank	Total/NA	Water	8270E SIM	449175
LCS 410-449175/2-A	Lab Control Sample	Total/NA	Water	8270E SIM	449175
LCSD 410-449175/3-A	Lab Control Sample Dup	Total/NA	Water	8270E SIM	449175

Analysis Batch: 449591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152759-1	Outfall-01A	Total/NA	Groundwater	8270E SIM	449175
410-152759-2	Outfall-001	Total/NA	Groundwater	8270E SIM	449175
410-152759-3	Outfall-002	Total/NA	Groundwater	8270E SIM	449175

LCMS

Prep Batch: 449184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152759-1	Outfall-01A	Total/NA	Groundwater	1633	
410-152759-2	Outfall-001	Total/NA	Groundwater	1633	
410-152759-3	Outfall-002	Total/NA	Groundwater	1633	
MB 410-449184/1-A	Method Blank	Total/NA	Water	1633	
LCS 410-449184/2-A	Lab Control Sample	Total/NA	Water	1633	
LLCS 410-449184/3-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 451638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152759-1	Outfall-01A	Total/NA	Groundwater	Draft-4 1633	449184
410-152759-2	Outfall-001	Total/NA	Groundwater	Draft-4 1633	449184
410-152759-3	Outfall-002	Total/NA	Groundwater	Draft-4 1633	449184
MB 410-449184/1-A	Method Blank	Total/NA	Water	Draft-4 1633	449184
LCS 410-449184/2-A	Lab Control Sample	Total/NA	Water	Draft-4 1633	449184
LLCS 410-449184/3-A	Lab Control Sample	Total/NA	Water	Draft-4 1633	449184

General Chemistry

Analysis Batch: 448612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152759-1	Outfall-01A	Total/NA	Groundwater	1633 DRAFT	
410-152759-2	Outfall-001	Total/NA	Groundwater	1633 DRAFT	
410-152759-3	Outfall-002	Total/NA	Groundwater	1633 DRAFT	

Analysis Batch: 449595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-152759-1	Outfall-01A	Total/NA	Groundwater	9060A	
410-152759-2	Outfall-001	Total/NA	Groundwater	9060A	
410-152759-3	Outfall-002	Total/NA	Groundwater	9060A	

General Chemistry (Continued)

Analysis Batch: 449595 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-449595/4	Method Blank	Total/NA	Water	9060A	
LCS 410-449595/3	Lab Control Sample	Total/NA	Water	9060A	

Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152759-1

Client Sample ID: Outfall-01A

Date Collected: 11/29/23 07:45
Date Received: 11/29/23 17:45

Lab Sample ID: 410-152759-1

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449175	QJZ6	ELLE	12/01/23 15:12
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 08:07
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 13:44
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449595	P684	ELLE	12/01/23 23:05

Client Sample ID: Outfall-001

Date Collected: 11/29/23 08:00
Date Received: 11/29/23 17:45

Lab Sample ID: 410-152759-2

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449175	QJZ6	ELLE	12/01/23 15:12
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 08:29
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 13:57
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449595	P684	ELLE	12/01/23 23:43

Client Sample ID: Outfall-002

Date Collected: 11/29/23 08:30
Date Received: 11/29/23 17:45

Lab Sample ID: 410-152759-3

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			449175	QJZ6	ELLE	12/01/23 15:12
Total/NA	Analysis	8270E SIM		1	449591	UJM0	ELLE	12/04/23 08:52
Total/NA	Prep	1633			449184	K3UG	ELLE	12/01/23 15:25
Total/NA	Analysis	Draft-4 1633		1	451638	VK3G	ELLE	12/08/23 14:37
Total/NA	Analysis	1633 DRAFT		1	448612	M98K	ELLE	11/30/23 12:28
Total/NA	Analysis	9060A		1	449595	P684	ELLE	12/02/23 00:22

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10670	04-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1633 DRAFT		Groundwater	Total Suspended Solids
Draft-4 1633	1633	Groundwater	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)
Draft-4 1633	1633	Groundwater	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol
Draft-4 1633	1633	Groundwater	2-(N-methylperfluoro-1-octanesulfonamido) ethanol
Draft-4 1633	1633	Groundwater	3:3 FTCA
Draft-4 1633	1633	Groundwater	5:3 FTCA
Draft-4 1633	1633	Groundwater	7:3 FTCA
Draft-4 1633	1633	Groundwater	NEtFOSAA
Draft-4 1633	1633	Groundwater	N-ethylperfluoro-1-octanesulfonamide
Draft-4 1633	1633	Groundwater	NMeFOSA
Draft-4 1633	1633	Groundwater	Perfluorodecanesulfonic acid
Draft-4 1633	1633	Groundwater	Perfluorododecanesulfonic acid (PFDoS)
Draft-4 1633	1633	Groundwater	Perfluoroheptanoic acid
Draft-4 1633	1633	Groundwater	Perfluorononanesulfonic acid
Draft-4 1633	1633	Groundwater	Perfluorooctanesulfonamide
Draft-4 1633	1633	Groundwater	PFEESA

Method Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-152759-1
Project/Site: EMGPRP

Method	Method Description	Protocol	Laboratory
8270E SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
Draft-4 1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	ELLE
1633 DRAFT	Percent Suspend Solids for Analysis PFAS in Aqueous Samples by LC/MS	EPA	ELLE
9060A	Organic Carbon, Total (TOC)	SW846	ELLE
1633	Solid-Phase Extraction (SPE)	EPA	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE

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:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-152759-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-152759-1	Outfall-01A	Groundwater	11/29/23 07:45	11/29/23 17:45
410-152759-2	Outfall-001	Groundwater	11/29/23 08:00	11/29/23 17:45
410-152759-3	Outfall-002	Groundwater	11/29/23 08:30	11/29/23 17:45

410-152759 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

Client Contact: Natalia Barragan-Valderrama	Sampler: Drew Kaplan	Lab PM: Moeller, Megan	Carrier Tracking No(s):	COC No:
	Phone:	E-Mail: Megan.Moeller@et.eurofinsus.com	State of Origin:	Page: 1 of 1
Company: Roux Environmental Engineering and Geology	PWSID:			Job #:

Address: 209 Shafter St	Due Date Requested:	
City: Islandia	TAT Requested (days): RUSH-ASAP	
State, Zip: NY 11749	Compliance Project: Δ Yes Δ No	
Phone: 2813553653	PO #: 0172.0030Y093	
Email: nbarragan@rouxinc.com	WO #:	
Project Name: EMGPRP	Project #: 41000909	
Site: New York	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	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)	8270_SIM-1,4 Dioxane SIM	1633-PFAS 1633	9060A - TOC	1633_DRAFT_TSS - Percent Suspend Solids for Analysis PFAS in Aqueous Sammples by LC/MS	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
OUTFALL-01A	11/29/23	07:45	G	W			x	x	x	x	7	
OUTFALL-001	11/29/23	08:00	G	W			x	x	x	x	7	
OUTFALL-002	11/29/23	08:30	G	W			x	x	x	x	7	

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by: Drew Kaplan	Date/Time: 11/29/23 1400	Company: ROUX	Received by: RPMdlm	Date/Time: 29NW23 1400	Company: ELLE
Relinquished by: RPMdlm	Date/Time: 29NW23 1745	Company: ELLE	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 11/29/23 1745	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: raw: 9.0 corr: 8.4

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-152759-1

Login Number: 152759
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is 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 acceptable,where thermal pres is required(</=6C, not frozen).	False	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Matthew Mueller
Roux Environmental Eng & Geology DPC
209 Shafter St
Islandia, New York 11749

Generated 1/8/2024 5:32:56 PM

JOB DESCRIPTION

EMGPRP

JOB NUMBER

410-156219-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

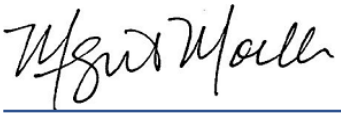
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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1/8/2024 5:32:56 PM

Authorized for release by
Megan Moeller, Client Services Manager
Megan.Moeller@et.eurofinsus.com
(717)556-7261

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

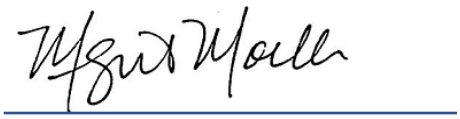

Table of Contents

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

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: 410-156219-1 — Eurofins Lancaster Laboratories Environment

Job Narrative
410-156219-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/2/2024 7:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

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

Detection Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001 — Lab Sample ID: 410-156219-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.65		0.50	0.20	ng/L	1		1631E	Total/NA

Client Sample ID: Outfall-01A — Lab Sample ID: 410-156219-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.63		0.50	0.20	ng/L	1		1631E	Total/NA

Client Sample ID: Outfall-002 — Lab Sample ID: 410-156219-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.71		0.50	0.20	ng/L	1		1631E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001
Lab Sample ID: 410-156219-1
Date Collected: 01/02/24 09:40
Matrix: Groundwater
Date Received: 01/02/24 19:45

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.65		0.50	0.20	ng/L			01/05/24 16:12	1

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Client Sample ID: Outfall-01A
Lab Sample ID: 410-156219-2
Date Collected: 01/02/24 09:30
Matrix: Groundwater
Date Received: 01/02/24 19:45

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.63		0.50	0.20	ng/L			01/05/24 16:16	1

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Client Sample ID: Outfall-002
Lab Sample ID: 410-156219-3
Date Collected: 01/02/24 09:10
Matrix: Groundwater
Date Received: 01/02/24 19:45

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.71		0.50	0.20	ng/L			01/05/24 16:20	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-156219-1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 350-1018/13
Matrix: Water
Analysis Batch: 1018

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.20	ng/L			01/05/24 15:26	1

Lab Sample ID: MB 350-1018/14
Matrix: Water
Analysis Batch: 1018

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.20	ng/L			01/05/24 15:30	1

Lab Sample ID: MB 350-1018/15
Matrix: Water
Analysis Batch: 1018

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.20	ng/L			01/05/24 15:34	1

Lab Sample ID: LCS 350-1018/16
Matrix: Water
Analysis Batch: 1018

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			5.00	4.74		ng/L		95	77 - 123		

Lab Sample ID: LCSD 350-1018/17
Matrix: Water
Analysis Batch: 1018

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			5.00	4.94		ng/L		99	77 - 123	4	24

QC Association Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Metals

Analysis Batch: 1018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-156219-1	Outfall-001	Total/NA	Groundwater	1631E	
410-156219-2	Outfall-01A	Total/NA	Groundwater	1631E	
410-156219-3	Outfall-002	Total/NA	Groundwater	1631E	
MB 350-1018/13	Method Blank	Total/NA	Water	1631E	
MB 350-1018/14	Method Blank	Total/NA	Water	1631E	
MB 350-1018/15	Method Blank	Total/NA	Water	1631E	
LCS 350-1018/16	Lab Control Sample	Total/NA	Water	1631E	
LCSD 350-1018/17	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-156219-1

Client Sample ID: Outfall-001

Lab Sample ID: 410-156219-1

Date Collected: 01/02/24 09:40

Matrix: Groundwater

Date Received: 01/02/24 19:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1018	AJD	EET SSM	01/05/24 16:12

Client Sample ID: Outfall-01A

Lab Sample ID: 410-156219-2

Date Collected: 01/02/24 09:30

Matrix: Groundwater

Date Received: 01/02/24 19:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1018	AJD	EET SSM	01/05/24 16:16

Client Sample ID: Outfall-002

Lab Sample ID: 410-156219-3

Date Collected: 01/02/24 09:10

Matrix: Groundwater

Date Received: 01/02/24 19:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1018	AJD	EET SSM	01/05/24 16:20

Laboratory References:

EET SSM = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424

Accreditation/Certification Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	12-18-24
ANAB	Dept. of Defense ELAP	L2236	12-18-24
ANAB	Dept. of Energy	L2236.01	12-18-24
ANAB	ISO/IEC 17025	L2236	12-18-24
California	State	2954	12-18-24
Florida	NELAP	E87575	12-18-24
Louisiana (All)	NELAP	03073	12-18-24
Maine	State	WA01273	12-18-24
New Jersey	NELAP	WA014	12-18-24
New York	NELAP	67778	12-18-24
Oregon	NELAP	4167-008	12-18-24
US Fish & Wildlife	US Federal Programs	A20571	12-18-24
USDA	US Federal Programs	525-23-4-22573	12-18-24
Washington	State	C788-23a	12-18-24
Wisconsin	State	399133460	12-18-24

Method Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SSM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SSM = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424

Sample Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156219-1
Project/Site: EMGPRP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-156219-1	Outfall-001	Groundwater	01/02/24 09:40	01/02/24 19:45
410-156219-2	Outfall-01A	Groundwater	01/02/24 09:30	01/02/24 19:45
410-156219-3	Outfall-002	Groundwater	01/02/24 09:10	01/02/24 19:45

410-156219 Chain of Custody

lv, LLC

Chain of Custody Record

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	Sampler: Drew Kaplan	Lab PM: Moeller, Megan	Carrier Tracking No(s):	COC No:
Client Contact: Natalia Barragan-Valderrama	Phone: 5169499613	E-Mail: Megan.Moeller@et.eurofinsus.com	State of Origin:	Page: 1 of 1
Company: Roux Environmental Engineering and Geology	PWSID:			Job #:
Address: 209 Shafter St	Due Date Requested:			
City: Islandia	TAT Requested (days): 5			
State, Zip: NY	Compliance Project: Δ Yes Δ No			
Phone: 2813553653	PO #: 0172.0030Y090			
Email: dnbarragan@rouxinc.com	WO #:			
Project Name: EMGPRP	Project #: 41000909			
Site: New York	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	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)	1631E	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
OUTFALL-001	1/2/24	0940	G	W			X	1	
OUTFALL-01A	1/2/24	0930	G	W			X	1	
OUTFALL-002	1/2/24	0910	G	W			X	1	

Possible Hazard Identification

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

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

	Date/Time	Company		Date/Time	Company
Relinquished by: Drew Kaplan	1/2/24 1400	Roux	Received by:	2JAN24 1400	ELLE
Relinquished by:	2Jan24 1945	ELLE	Received by:		
Relinquished by:			Received by:	1/2/24 1945	ELLE

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 190647

Cooler Temperature(s) °C and Other Remarks: 2.7/2.8

Ver: 01/16/2019

Eurofins Lancaster Laboratories Environme
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM	Carrier Tracking No(s)	COC No
		Moeller, Megan		410-2599655.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Megan.Moeller@et.eurofinsus.com	State of Origin: New York	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): NELAP - New York		Job #: 410-156219-1
Address: 5755 8th Street E, ,	Due Date Requested: 1/8/2024			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone	PO #			
Email	WO #			
Project Name: EMGPRP	Project #: 41000909			
Site: EMGPRP	SSOW#			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, 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)	1631E/ Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall-001 (410-156219-1)	1/2/24	09:40 Eastern		Water			X	1	
Outfall-01A (410-156219-2)	1/2/24	09:30 Eastern		Water			X	1	
Outfall-002 (410-156219-3)	1/2/24	09:10 Eastern		Water			X	1	JS 1/4/24 Small Blue

Therm. ID: Dig 31 Cust. Seal: Y / N
Uncorr./Corr. Temp: 0.2 / 0.2 °C
Delivery: UPS / FedEx / Other: _____
Ice Type: Blue / Dry / Wet / None
Label Ver.: TL Packing: Bubble

Note Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Environment Testing, LLC places the ownership of method, analyte & accreditation compliance upon our 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 Lancaster Laboratories Environment Testing, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Environment Testing, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Lancaster Laboratories Environment Testing, LLC

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: 6449 7736 5338

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Kristi Deans	1/3/24 1457	ELLET	Jesse Singh	1/4/24 9:38	EFGS
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

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

Ver: 06/08/2021

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410-156219 Field Sheet

Date:	1/4/2024
End Time:	11:26
KI Paper Lot:	na
Analyst:	JS

Preservative ID	Preservative Type	Container ID
A	Bromine Monochloride (0.2N)	~~3638221~~
zzzzzzzzzzzzzzzz	zzzzzzzzzzzzzzzzzzzzzzzz	zzzzzzzzzz
zzzzzzzzzzzzzzzz	zzzzzzzzzzzzzzzzzzzzzzzz	zzzzzzzzzz
zzzzzzzzzzzzzzzz	zzzzzzzzzzzzzzzzzzzzzzzz	zzzzzzzzzz

3658221 JS 1/4/24

Sample ID	Pres. Used (ID)	Oxidized (Y/N)?	Pres. Vol. (mL)/Percent (%)	Comments
410-156219-A-1	A	Y	5mL 2%	
410-156219-A-2	A	Y	5mL 2%	
410-156219-A-3	A	Y	5mL 2%	

JS 1/4/24

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-156219-1

Login Number: 156219

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Wrye, Shaun

Question	Answer	Comment
The cooler's custody seal 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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-156219-1

Login Number: 156219
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/04/24 10:41 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
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 containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Matthew Mueller
Roux Environmental Eng & Geology DPC
209 Shafter St
Islandia, New York 11749

Generated 1/8/2024 7:44:42 PM

JOB DESCRIPTION

EMGPRP

JOB NUMBER

410-156315-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.

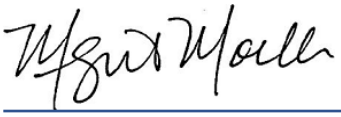
my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
Megan Moeller, Client Services Manager
Megan.Moeller@et.eurofinsus.com
(717)556-7261

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

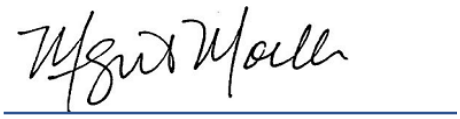

Table of Contents

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

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: 410-156315-1 Eurofins Lancaster Laboratories Environment

Job Narrative
410-156315-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/3/2024 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.8°C

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: Outfall-001 (410-156315-1), Outfall-01A (410-156315-2) and Outfall-002 (410-156315-3). The sample(s) is considered acceptable since it was collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

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

Detection Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001 — Lab Sample ID: 410-156315-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.80		0.50	0.20	ng/L	1		1631E	Total/NA

Client Sample ID: Outfall-01A — Lab Sample ID: 410-156315-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.72		0.50	0.20	ng/L	1		1631E	Total/NA

Client Sample ID: Outfall-002 — Lab Sample ID: 410-156315-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.72		0.50	0.20	ng/L	1		1631E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001
Lab Sample ID: 410-156315-1
Date Collected: 01/03/24 09:15
Matrix: Groundwater
Date Received: 01/03/24 18:25

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.80		0.50	0.20	ng/L			01/08/24 13:43	1

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Client Sample ID: Outfall-01A
Lab Sample ID: 410-156315-2
Date Collected: 01/03/24 09:25
Matrix: Groundwater
Date Received: 01/03/24 18:25

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.72		0.50	0.20	ng/L			01/08/24 13:47	1

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Client Sample ID: Outfall-002
Lab Sample ID: 410-156315-3
Date Collected: 01/03/24 08:55
Matrix: Groundwater
Date Received: 01/03/24 18:25

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.72		0.50	0.20	ng/L			01/08/24 13:51	1

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-156315-1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 350-1020/13
Matrix: Water
Analysis Batch: 1020

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.20	ng/L			01/08/24 13:26	1

Lab Sample ID: MB 350-1020/14
Matrix: Water
Analysis Batch: 1020

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.20	ng/L			01/08/24 13:30	1

Lab Sample ID: MB 350-1020/15
Matrix: Water
Analysis Batch: 1020

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.20	ng/L			01/08/24 13:34	1

Lab Sample ID: LCS 350-1020/25
Matrix: Water
Analysis Batch: 1020

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			5.00	4.90		ng/L		98	77 - 123		

Lab Sample ID: LCSD 350-1020/26
Matrix: Water
Analysis Batch: 1020

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			5.00	5.00		ng/L		100	77 - 123	2	24

QC Association Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Metals

Analysis Batch: 1020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-156315-1	Outfall-001	Total/NA	Groundwater	1631E	
410-156315-2	Outfall-01A	Total/NA	Groundwater	1631E	
410-156315-3	Outfall-002	Total/NA	Groundwater	1631E	
MB 350-1020/13	Method Blank	Total/NA	Water	1631E	
MB 350-1020/14	Method Blank	Total/NA	Water	1631E	
MB 350-1020/15	Method Blank	Total/NA	Water	1631E	
LCS 350-1020/25	Lab Control Sample	Total/NA	Water	1631E	
LCSD 350-1020/26	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001
Lab Sample ID: 410-156315-1
Date Collected: 01/03/24 09:15
Matrix: Groundwater
Date Received: 01/03/24 18:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1020	AJD	EET SSM	01/08/24 13:43

Client Sample ID: Outfall-01A
Lab Sample ID: 410-156315-2
Date Collected: 01/03/24 09:25
Matrix: Groundwater
Date Received: 01/03/24 18:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1020	AJD	EET SSM	01/08/24 13:47

Client Sample ID: Outfall-002
Lab Sample ID: 410-156315-3
Date Collected: 01/03/24 08:55
Matrix: Groundwater
Date Received: 01/03/24 18:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1020	AJD	EET SSM	01/08/24 13:51

Laboratory References:

EET SSM = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424

Accreditation/Certification Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	12-18-24
ANAB	Dept. of Defense ELAP	L2236	12-18-24
ANAB	Dept. of Energy	L2236.01	12-18-24
ANAB	ISO/IEC 17025	L2236	12-18-24
California	State	2954	12-18-24
Florida	NELAP	E87575	12-18-24
Louisiana (All)	NELAP	03073	12-18-24
Maine	State	WA01273	12-18-24
New Jersey	NELAP	WA014	12-18-24
New York	NELAP	67778	12-18-24
Oregon	NELAP	4167-008	12-18-24
US Fish & Wildlife	US Federal Programs	A20571	12-18-24
USDA	US Federal Programs	525-23-4-22573	12-18-24
Washington	State	C788-23a	12-18-24
Wisconsin	State	399133460	12-18-24

Method Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156315-1
Project/Site: EMGPRP

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SSM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SSM = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424

Sample Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-156315-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-156315-1	Outfall-001	Groundwater	01/03/24 09:15	01/03/24 18:25
410-156315-2	Outfall-01A	Groundwater	01/03/24 09:25	01/03/24 18:25
410-156315-3	Outfall-002	Groundwater	01/03/24 08:55	01/03/24 18:25

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone (717) 656-2300

Chain of Custody Record

410-156315 Chain of Custody

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Client Information	Sampler: Drew Kaplan	Lab PM: Moeller, Megan	COC No:
Client Contact: Natalia Barragan-Valderrama	Phone: 5169499613	E-Mail: Megan.Moeller@et.eurofinsus.com	Page: 1 of 1
Company: Roux Environmental Engineering and Geology	PWSID:		Job #:
Address: 209 Shafter St	Due Date Requested:		
City: Islandia	TAT Requested (days): 5		
State, Zip: NY	Compliance Project: Δ Yes Δ No		
Phone: 2813553653	PO #: 0172 0030Y090		
Email: dnbarragan@rouxinc.com	WO #:		
Project Name: EMGPRP	Project #: 41000909		
Site: New York	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	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)	1631E-	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
OUTFALL-001	1/3/24	0915	G	W			X	1	
OUTFALL-01A	1/3/24	0925	G	W			X	1	
OUTFALL-002	1/3/24	0855	G	W			X	1	

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	1/3/24	Roux	Clarence Williams	1/3/24 1420	E|E
2	Clarence Williams	1/3/24 1825	E|E			
3				[signature]	1/3/24 1825	E|E

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 122282

Cooler Temperature(s) °C and Other Remarks: R 7.9 C 7.8

Ver: 01/16/2019

Eurofins Lancaster Laboratories Environme
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM	Carrier Tracking No(s)	COC No
		Moeller, Megan		410-2601353.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Megan Moeller@et eurofinsus com	State of Origin: New York	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): NELAP - New York		Job #: 410-156315-1
Address: 5755 8th Street E, ,	Due Date Requested: 1/9/2024			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone	PO #			
Email	WO #			
Project Name: EMGPRP	Project #: 41000909			
Site: EMGPRP	SSOW#			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, 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)	1631E/ Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Outfall-001 (410-156315-1)	1/3/24	09:15 Eastern		Water			X	1	
Outfall-01A (410-156315-2)	1/3/24	09:25 Eastern		Water			X	1	
Outfall-002 (410-156315-3)	1/3/24	08:55 Eastern		Water			X	1	
									5 ~ Blue

Therm. ID: Dig 3 Cust. Seal: (Y) N
Uncorr./Corr. Temp: 0.0 °C
Delivery: UPS / (FedEx) / Other: ____
Ice Type: Blue / Dry / (Wet) / None
Label Ver.: ____ Packing: IS

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Environment Testing, LLC places the ownership of method, analyte & accreditation compliance upon our 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 Lancaster Laboratories Environment Testing, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Environment Testing, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Lancaster Laboratories Environment Testing, LLC.

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: 6449 7736 5544

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Kristin Deane	1/4/23 1449	ELLET		1/5/24 9:15	FEDEX
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-156315-1

Login Number: 156315

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Roth, Stephanie

Question	Answer	Comment
The cooler's custody seal 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 acceptable,where thermal pres is required(</=6C, not frozen).	False	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-156315-1

Login Number: 156315
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/05/24 11:59 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
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 containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Matthew Mueller
Roux Environmental Eng & Geology DPC
209 Shafter St
Islandia, New York 11749

Generated 1/10/2024 6:39:53 PM

JOB DESCRIPTION

EMGPRP

JOB NUMBER

410-156459-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

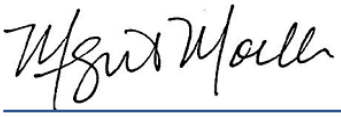
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
1/10/2024 6:39:53 PM

Authorized for release by
Megan Moeller, Client Services Manager
Megan.Moeller@et.eurofinsus.com
(717)556-7261

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

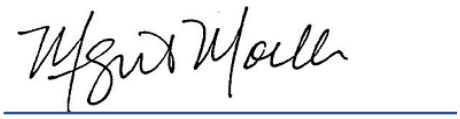


Table of Contents

Definitions/Glossary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail

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: 410-156459-1 — Eurofins Lancaster Laboratories Environment

Job Narrative
410-156459-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/4/2024 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.9°C

Metals
Method 1631E: The continuing calibration verification (CCV) associated with batch 350-1026 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

Detection Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001 — Lab Sample ID: 410-156459-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.61		0.50	0.20	ng/L	1		1631E	Total/NA

Client Sample ID: Outfall-01A — Lab Sample ID: 410-156459-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.64		0.50	0.20	ng/L	1		1631E	Total/NA

Client Sample ID: Outfall-002 — Lab Sample ID: 410-156459-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.67		0.50	0.20	ng/L	1		1631E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001
Lab Sample ID: 410-156459-1
Date Collected: 01/04/24 11:35
Matrix: Groundwater
Date Received: 01/04/24 18:30

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.61		0.50	0.20	ng/L			01/10/24 14:12	1

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Client Sample ID: Outfall-01A
Lab Sample ID: 410-156459-2
Date Collected: 01/04/24 11:25
Matrix: Groundwater
Date Received: 01/04/24 18:30

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.64		0.50	0.20	ng/L			01/10/24 14:16	1

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Client Sample ID: Outfall-002
Lab Sample ID: 410-156459-3
Date Collected: 01/04/24 11:10
Matrix: Groundwater
Date Received: 01/04/24 18:30

Method: EPA 1631E - Mercury, Low Level (CVAFS)
Lab: Eurofins Seattle

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.67		0.50	0.20	ng/L			01/10/24 14:20	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 350-1026/13
Matrix: Water
Analysis Batch: 1026

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+ cn	0.50	0.20	ng/L			01/10/24 12:11	1

Lab Sample ID: MB 350-1026/14
Matrix: Water
Analysis Batch: 1026

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+ cn	0.50	0.20	ng/L			01/10/24 12:16	1

Lab Sample ID: MB 350-1026/15
Matrix: Water
Analysis Batch: 1026

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+ cn	0.50	0.20	ng/L			01/10/24 12:20	1

Lab Sample ID: LCS 350-1026/34
Matrix: Water
Analysis Batch: 1026

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			5.00	4.21		ng/L		84	77 - 123		

Lab Sample ID: LCSD 350-1026/35
Matrix: Water
Analysis Batch: 1026

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			5.00	4.74		ng/L		95	77 - 123	12	24

QC Association Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Metals

Analysis Batch: 1026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-156459-1	Outfall-001	Total/NA	Groundwater	1631E	
410-156459-2	Outfall-01A	Total/NA	Groundwater	1631E	
410-156459-3	Outfall-002	Total/NA	Groundwater	1631E	
MB 350-1026/13	Method Blank	Total/NA	Water	1631E	
MB 350-1026/14	Method Blank	Total/NA	Water	1631E	
MB 350-1026/15	Method Blank	Total/NA	Water	1631E	
LCS 350-1026/34	Lab Control Sample	Total/NA	Water	1631E	
LCSD 350-1026/35	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Client Sample ID: Outfall-001
Lab Sample ID: 410-156459-1
Date Collected: 01/04/24 11:35
Matrix: Groundwater
Date Received: 01/04/24 18:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1026	D1C	EET SSM	01/10/24 14:12

Client Sample ID: Outfall-01A
Lab Sample ID: 410-156459-2
Date Collected: 01/04/24 11:25
Matrix: Groundwater
Date Received: 01/04/24 18:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1026	D1C	EET SSM	01/10/24 14:16

Client Sample ID: Outfall-002
Lab Sample ID: 410-156459-3
Date Collected: 01/04/24 11:10
Matrix: Groundwater
Date Received: 01/04/24 18:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	1631E		1	1026	D1C	EET SSM	01/10/24 14:20

Laboratory References:

EET SSM = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (206)622-6960

Accreditation/Certification Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	12-18-24
ANAB	Dept. of Defense ELAP	L2236	12-18-24
ANAB	Dept. of Energy	L2236.01	12-18-24
ANAB	ISO/IEC 17025	L2236	12-18-24
California	State	2954	12-18-24
Florida	NELAP	E87575	12-18-24
Louisiana (All)	NELAP	03073	12-18-24
Maine	State	WA01273	12-18-24
New Jersey	NELAP	WA014	12-18-24
New York	NELAP	67778	12-18-24
Oregon	NELAP	4167-008	12-18-24
US Fish & Wildlife	US Federal Programs	A20571	12-18-24
USDA	US Federal Programs	525-23-4-22573	12-18-24
Washington	State	C788-23a	12-18-24
Wisconsin	State	399133460	12-18-24

Method Summary

Client: Roux Environmental Eng & Geology DPC
Job ID: 410-156459-1
Project/Site: EMGPRP

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SSM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SSM = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (206)622-6960

Sample Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: EMGPRP

Job ID: 410-156459-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-156459-1	Outfall-001	Groundwater	01/04/24 11:35	01/04/24 18:30
410-156459-2	Outfall-01A	Groundwater	01/04/24 11:25	01/04/24 18:30
410-156459-3	Outfall-002	Groundwater	01/04/24 11:10	01/04/24 18:30

410-156459 Chain of Custody

Chain of Custody Record

eurofins | Environment Testing America

	Sampler: Drew Kaplan	Lab PM: Moeller, Megan	Carrier Tracking No(s):	COC No:
Natalia Barragan-Valderrama	Phone: 5169499613	E-Mail: Megan.Moeller@et.eurofinsus.com	State of Origin:	Page: 1 of 1
Company: Roux Environmental Engineering and Geology	PWSID:	**Analysis Requested**		Job #:
Address: 209 Shafter St	Due Date Requested:			
City: Islandia	TAT Requested (days): 3			
State, Zip: NY	Compliance Project: Δ Yes Δ No			
Phone: 2813553653	PO #: 0172.0030Y090			
Email: dnbarragan@rouxinc.com	WO #:			
Project Name: EMGPRP	Project #: 41000909			
Site: New York	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA

M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	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)	1631E-	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
OUTFALL-001	1/4/23	1135	G	W			X	1	
OUTFALL-01A	1/4/23	1125	G	W			X	1	
OUTFALL-002	1/4/23	1110	G	W			X	1	

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: 1/4/24

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/4/24 1435	Roux	[signature]	4 Jan 24 1435	ELLE
[signature]	4 Jan 24 1830	ELLE			
			[signature]	1-4-24 1830	ELLE

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
Δ Yes Δ No	172053	R 4.1 C 3.9 @ SIV90EL9

NX

Ver: 01/16/2019

1/10/2024

eurofins | Environment Testing

410-156459 Field Sheet

Date:	1/8/2024
End Time:	10:07
KI Paper Lot:	na
Analyst:	

Preservative ID	Preservative Type	Container ID
A	Bromine Monochloride (0.2N)	3658221
zzzzzzzzzzzzzzz	zzzzzzzzzzzzzzzzzzzzzzz	zzzzzzzzzz
zzzzzzzzzzzzzzz	zzzzzzzzzzzzzzzzzzzzzzz	zzzzzzzzzz
zzzzzzzzzzzzzzz	zzzzzzzzzzzzzzzzzzzzzzz	zzzzzzzzzz

Sample ID	Pres. Used (ID)	Oxidized (Y/N)?	Pres. Vol. (mL)/Percent (%)	Comments
410-156459-A-1	A	Y	5 2	
410-156459-A-2	A	Y	5 2	
410-156459-A-3	A	Y	5 2	1/8/24

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-156459-1

Login Number: 156459

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Kanagy, Nicholas

Question	Answer	Comment
The cooler's custody seal 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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 410-156459-1

Login Number: 156459
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/08/24 08:52 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
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 containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment D

Water Treatment Chemical (WTC) Notification Forms

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request Instructions Page

(July 2023)

APPLICABILITY:

New or increased use and discharge of a Water Treatment Chemical (WTC) requires prior New York State Department of Environmental Conservation (NYSDEC) review and authorization. At a minimum, the permittee must notify NYSDEC in writing of its intent to change WTC use by submitting a completed WTC Form for each proposed WTC. NYSDEC will review that submittal and determine if a SPDES permit modification is first necessary or whether WTC authorization may proceed without a formal permit modification. The majority of WTC authorizations do not require SPDES permit modification. In any event, use and discharge of most WTCs cannot proceed without prior authorization from NYSDEC. NYSDEC staff may also direct you to use this form for review and authorization of other substances which could be present in wastewater.

Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, deposit control agents, flocculants, scale inhibitors, sequestrants, and settling aids.

INSTRUCTIONS:

For **each** new or increased use of a WTC, please complete items 1.a., and 2 - 15 on the attached *WTC Authorization Request***.** Some WTC manufacturers may be reluctant to reveal product formulations to the permittee. In those cases the WTC manufacturer may take a partially completed form from the permittee, fill in the remaining information plus items 1.b. and 16, and send the completed form directly to the permit writer. **Email the completed form to: spdesapp@dec.ny.gov**

SPDES ID: 0267724

Permit Class:

County: Kings

Completing Item 8.b. (Outfall WTC Concentration) - In general, the average mg/L should be determined by dividing the average dosage in 7a by the average flow in 8a and then dividing by 8.34; the maximum mg/L should be determined by dividing the maximum dosage in 7a by the average flow in 8a and then dividing by 8.34; however, for blowdowns which are highly intermittent or are not tributary to a treatment system or some form of equalization, it may be appropriate to factor in the information in item 9 when completing this item.

Completing Item 12 (Toxicity Information) - All reported test data must represent tests conducted in accordance with current EPA toxicity testing manuals for appropriate species. Submission of acute (48 or 96 hour LC50 or EC50) and/or chronic (7 day NOEC or IC25) test results for at least one vertebrate and one invertebrate species is required.

In most cases, after reviewing the submission, NYSDEC will send a letter notifying the person identified in item 2.c and, if appropriate, to the facility inspector of the WTC authorization decision.

ADDITIONAL INFORMATION:

Please visit the NYSDEC website at http://www.dec.ny.gov/permits/93245.html for copies of this form, copies of the *WTC Annual Report Form*, and additional information on WTCs.

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request **Page 1 of 2** (July 2023)

For help completing this form refer to instructions page and to http://www.dec.ny.gov/permits/93245.html .

1.a. Date Signed by Permittee - 12/8/23	1.b. Date Signed by WTC Manufacturer - 12/8/23
2.a. Permittee Name - ExxonMobil Oil Corporation	2.b. SPDES No. - NY 0267724
2.c. Contact Name - Michael Burghardt	
3.a. WTC Name - Redux 375	
3.b. WTC Manufacturer - Redux Technology, Div. Azure Water Services, LLC	
4.a. WTC Function - Protects treatment equipment from fouling by calcium carbonate and iron	
4.b. If WTC is a biocide is it NYS registered? Yes No	4.c. Registration Number -
5. WTC Point of Addition - Pre-sand filtration process	
6. Affected Outfall(s) - Outfall 002	
7.a. WTC Daily Dosage: average lbs/day = 180 , maximum lbs/day = 216	
7.b. Dosage Frequency: minutes/day = 1440 , days/week = 7	
8.a. Outfall Flow Rate: average MGD = 1.08 , maximum MGD = 1.30	
8.b. Outfall WTC Concentration: average mg/l = 20 , maximum mg/l = 20	
9.a. System Blowdown Flow Rate: average gpm = N/A , maximum gpm = N/A	
9.b. System Blowdown Frequency: minutes/day = N/A , days/week = N/A	

10.a. WTC Composition - Ingredients/Impurities (note: ingredients/impurities must total to 100%)	10.b. %	10.c. CAS#	10.d. Outfall Concentration
Polymaleic Acid	4.2	26099-09-2	0.84 mg/l
2 phosphono-1,2,4-butanetricarboxylic acid	5.3	37971-36-1	1.06 mg/l
Sodium hydroxide	1.5	1310732	0.30 mg/l
Water	89	7732-18-5	17.80 mg/l
			mg/l
			mg/l
			mg/l

10.e. Intermediate/Final Degradation Products - Water, carbon dioxide, organic acids
11. WTC BOD and COD (lb/lb) - unknown

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request **Page 2 of 2** (July 2023)

1.a. Date Signed by Permittee - 12/8/23	1.b. Date Signed by WTC Manufacturer - 12/8/23
2.b. SPDES No. - NY 0267724	
3.a.. WTC Name - Redux 375	7.a. Avg/Max Daily Dosage = 180 / 216 lbs/day

12. WTC Toxicity Info (most sensitive species) - Attach description of endpoint for each EC50.

12.a. Vertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
Cyprinodon variegatus, 96 hr	5,477.2 mg/l	mg/l	mg/l	mg/l
12.b. Vertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
	mg/l	mg/l	mg/l	mg/l
12.c. Invertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
Mysidopsis bahia, 48 hr	2,194.6 mg/l	mg/l	mg/l	mg/l
12.d. Invertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
	mg/l	mg/l	mg/l	mg/l

13. Summarize measures in place to ensure that excessive levels of WTC are not used -

A chemical metering pump, controlled by the System programmable logic controller (PLC), will be utilized to automatically adjust Redux 375 dosage to be proportional to the System process flow rate and maintain a constant WTC concentration in the process water. Operations personnel manually measure and verify chemical feed rate periodically.

14. WTCs to be discontinued when use of this WTC begins – Not Applicable

15. Permittee Certification - I certify under penalty of law that this request and all attachments are, to the best of my knowledge and belief, true, accurate and complete. I also certify that the WTC Usage Requirements and any additional requirements specified in the decision letter I will receive will be adhered to.

PRINT NAME - Michael Burghardt	SIGNATURE - Michael Burghardt
TITLE/COMPANY - US East Supervisor / ExxonMobil Oil Corporation	
TELEPHONE - 201-232-4417	EMAIL - michael.j.burghardt@exxonmobil.com

16. WTC Manufacturer Certification - I certify under penalty of law that Sections 1-4, 10-12 and any additional composition documentation submitted with as part of this request are, to the best of my knowledge and belief, true, accurate and complete.

PRINT NAME - Brad Horn	SIGNATURE - Brad Horn
TITLE/COMPANY - President, Redux Technology	
TELEPHONE - 203-823-1002	EMAIL - bhorn@reduxtech.com

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request Instructions Page

(July 2023)

APPLICABILITY:

New or increased use and discharge of a Water Treatment Chemical (WTC) requires prior New York State Department of Environmental Conservation (NYSDEC) review and authorization. At a minimum, the permittee must notify NYSDEC in writing of its intent to change WTC use by submitting a completed WTC Form for each proposed WTC. NYSDEC will review that submittal and determine if a SPDES permit modification is first necessary or whether WTC authorization may proceed without a formal permit modification. The majority of WTC authorizations do not require SPDES permit modification. In any event, use and discharge of most WTCs cannot proceed without prior authorization from NYSDEC. NYSDEC staff may also direct you to use this form for review and authorization of other substances which could be present in wastewater.

Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, deposit control agents, flocculants, scale inhibitors, sequestrants, and settling aids.

INSTRUCTIONS:

For **each** new or increased use of a WTC, please complete items 1.a., and 2 - 15 on the attached *WTC Authorization Request***.** Some WTC manufacturers may be reluctant to reveal product formulations to the permittee. In those cases the WTC manufacturer may take a partially completed form from the permittee, fill in the remaining information plus items 1.b. and 16, and send the completed form directly to the permit writer. **Email the completed form to: spdesapp@dec.ny.gov**

SPDES ID: 0267724

Permit Class:

County: Kings

Completing Item 8.b. (Outfall WTC Concentration) - In general, the average mg/L should be determined by dividing the average dosage in 7a by the average flow in 8a and then dividing by 8.34; the maximum mg/L should be determined by dividing the maximum dosage in 7a by the average flow in 8a and then dividing by 8.34; however, for blowdowns which are highly intermittent or are not tributary to a treatment system or some form of equalization, it may be appropriate to factor in the information in item 9 when completing this item.

Completing Item 12 (Toxicity Information) - All reported test data must represent tests conducted in accordance with current EPA toxicity testing manuals for appropriate species. Submission of acute (48 or 96 hour LC50 or EC50) and/or chronic (7 day NOEC or IC25) test results for at least one vertebrate and one invertebrate species is required.

In most cases, after reviewing the submission, NYSDEC will send a letter notifying the person identified in item 2.c and, if appropriate, to the facility inspector of the WTC authorization decision.

ADDITIONAL INFORMATION:

Please visit the NYSDEC website at http://www.dec.ny.gov/permits/93245.html for copies of this form, copies of the *WTC Annual Report Form*, and additional information on WTCs.

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request **Page 1 of 2** (July 2023)

For help completing this form refer to instructions page and to http://www.dec.ny.gov/permits/93245.html .

1.a. Date Signed by Permittee - 12/8/23	1.b. Date Signed by WTC Manufacturer - 12/8/23
2.a. Permittee Name - ExxonMobil Oil Corporation	2.b. SPDES No. - NY 0267724
2.c. Contact Name - Michael Burghardt	
3.a. WTC Name - Redux E50	
3.b. WTC Manufacturer - Redux Technology, Div. Azure Water Services, LLC	
4.a. WTC Function - Coagulant	
4.b. If WTC is a biocide is it NYS registered? Yes No	4.c. Registration Number -
5. WTC Point of Addition - Post sand filtration process	
6. Affected Outfall(s) - Outfall 002	
7.a. WTC Daily Dosage: average lbs/day = 18 , maximum lbs/day = 48	
7.b. Dosage Frequency: minutes/day = 1440 , days/week = 7	
8.a. Outfall Flow Rate: average MGD = 1.08 , maximum MGD = 1.30	
8.b. Outfall WTC Concentration: average mg/l = 0.10 , maximum mg/l = 0.22	
9.a. System Blowdown Flow Rate: average gpm = N/A , maximum gpm = N/A	
9.b. System Blowdown Frequency: minutes/day = N/A , days/week = N/A	

10.a. WTC Composition - Ingredients/Impurities (note: ingredients/impurities must total to 100%)	10.b. %	10.c. CAS#	10.d. Outfall Concentration
Polyaluminum Chlorohydrate	50	53026-85-0	0.11 mg/l
Water	50	7732-18-5	0.11 mg/l
			mg/l
			mg/l
			mg/l
			mg/l
			mg/l

10.e. Intermediate/Final Degradation Products - Aluminum oxide, chlorides, water
11. WTC BOD and COD (lb/lb) - unknown

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request **Page 2 of 2** (July 2023)

1.a. Date Signed by Permittee - 12/8/23	1.b. Date Signed by WTC Manufacturer - 12/8/23
2.b. SPDES No. - NY 0267724	
3.a.. WTC Name - Redux E50	7.a. Avg/Max Daily Dosage = 18 / 48 lbs/day

12. WTC Toxicity Info (most sensitive species) - Attach description of endpoint for each EC50.

12.a. Vertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
Cyprinodon variegatus, 48 hr	>10,000 mg/l	mg/l	mg/l	mg/l
12.b. Vertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
	mg/l	mg/l	mg/l	mg/l
12.c. Invertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
Mysidopsis bahia, 48 hr	2,874.6 mg/l	mg/l	mg/l	mg/l
12.d. Invertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
	mg/l	mg/l	mg/l	mg/l

13. Summarize measures in place to ensure that excessive levels of WTC are not used -
Redux E-50 is a coagulant used to precipitate iron in this application. The outfall concentration (8b) has been calculated to include the retention of WTC in sludge solids at 95% (5% in discharge).

14. WTCs to be discontinued when use of this WTC begins – Not Applicable

15. Permittee Certification - I certify under penalty of law that this request and all attachments are, to the best of my knowledge and belief, true, accurate and complete. I also certify that the WTC Usage Requirements and any additional requirements specified in the decision letter I will receive will be adhered to.

PRINT NAME - Michael Burghardt	SIGNATURE - Michael Burghardt
TITLE/COMPANY - US East Supervisor / ExxonMobil Oil Corporation	
TELEPHONE - 201-232-4417	EMAIL - michael.j.burghardt@exxonmobil.com

16. WTC Manufacturer Certification - I certify under penalty of law that Sections 1-4, 10-12 and any additional composition documentation submitted with as part of this request are, to the best of my knowledge and belief, true, accurate and complete.

PRINT NAME - Brad Horn	SIGNATURE - Brad Horn
TITLE/COMPANY - President, Redux Technology	
TELEPHONE - 203-823-1002	EMAIL - bhorn@reduxtech.com

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request Instructions Page

(July 2023)

APPLICABILITY:

New or increased use and discharge of a Water Treatment Chemical (WTC) requires prior New York State Department of Environmental Conservation (NYSDEC) review and authorization. At a minimum, the permittee must notify NYSDEC in writing of its intent to change WTC use by submitting a completed WTC Form for each proposed WTC. NYSDEC will review that submittal and determine if a SPDES permit modification is first necessary or whether WTC authorization may proceed without a formal permit modification. The majority of WTC authorizations do not require SPDES permit modification. In any event, use and discharge of most WTCs cannot proceed without prior authorization from NYSDEC. NYSDEC staff may also direct you to use this form for review and authorization of other substances which could be present in wastewater.

Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, deposit control agents, flocculants, scale inhibitors, sequestrants, and settling aids.

INSTRUCTIONS:

For **each** new or increased use of a WTC, please complete items 1.a., and 2 - 15 on the attached *WTC Authorization Request***.** Some WTC manufacturers may be reluctant to reveal product formulations to the permittee. In those cases the WTC manufacturer may take a partially completed form from the permittee, fill in the remaining information plus items 1.b. and 16, and send the completed form directly to the permit writer. **Email the completed form to: spdesapp@dec.ny.gov**

SPDES ID: _____

Permit Class: _____

County: _____

Completing Item 8.b. (Outfall WTC Concentration) - In general, the average mg/L should be determined by dividing the average dosage in 7a by the average flow in 8a and then dividing by 8.34; the maximum mg/L should be determined by dividing the maximum dosage in 7a by the average flow in 8a and then dividing by 8.34; however, for blowdowns which are highly intermittent or are not tributary to a treatment system or some form of equalization, it may be appropriate to factor in the information in item 9 when completing this item.

Completing Item 12 (Toxicity Information) - All reported test data must represent tests conducted in accordance with current EPA toxicity testing manuals for appropriate species. Submission of acute (48 or 96 hour LC50 or EC50) and/or chronic (7 day NOEC or IC25) test results for at least one vertebrate and one invertebrate species is required.

In most cases, after reviewing the submission, NYSDEC will send a letter notifying the person identified in item 2.c and, if appropriate, to the facility inspector of the WTC authorization decision.

ADDITIONAL INFORMATION:

Please visit the NYSDEC website at http://www.dec.ny.gov/permits/93245.html for copies of this form, copies of the *WTC Annual Report Form*, and additional information on WTCs.

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request **Page 1 of 2** (July 2023)

For help completing this form refer to instructions page and to http://www.dec.ny.gov/permits/93245.html .

1.a. Date Signed by Permittee - 12/8/23	1.b. Date Signed by WTC Manufacturer - 12/8/23
2.a. Permittee Name - ExxonMobil Oil Corporation	2.b. SPDES No. - NY 0267724
2.c. Contact Name - Michael Burghardt	
3.a. WTC Name - Redux P-853	
3.b. WTC Manufacturer - Redux Technology, Div. Azure Water Services, LLC	
4.a. WTC Function - Flocculant	
4.b. If WTC is a biocide is it NYS registered? Yes No	4.c. Registration Number -
5. WTC Point of Addition - Post sand filtration process	
6. Affected Outfall(s) - Outfall 002	
7.a. WTC Daily Dosage: average lbs/day = 1.44 , maximum lbs/day = 3.84	
7.b. Dosage Frequency: minutes/day = 1440 , days/week = 7	
8.a. Outfall Flow Rate: average MGD = 1.08 , maximum MGD = 1.30	
8.b. Outfall WTC Concentration: average mg/l = 0.01 , maximum mg/l = 0.02	
9.a. System Blowdown Flow Rate: average gpm = N/A , maximum gpm = N/A	
9.b. System Blowdown Frequency: minutes/day = N/A , days/week = N/A	

10.a. WTC Composition - Ingredients/Impurities (note: ingredients/impurities must total to 100%)	10.b. %	10.c. CAS#	10.d. Outfall Concentration
Sodium Polyacrylate	30	600-07-7	0.005 mg/l
Water	70	7732-18-5	0.012 mg/l
			mg/l
			mg/l
			mg/l
			mg/l
			mg/l

10.e. Intermediate/Final Degradation Products - Carbon dioxide, sodium salts, water
11. WTC BOD and COD (lb/lb) - unknown

New York State Department of Environmental Conservation
Division of Water
SPDES Permit - WTC Authorization Request **Page 2 of 2** (July 2023)

1.a. Date Signed by Permittee - 12/8/23	1.b. Date Signed by WTC Manufacturer - 12/8/23
2.b. SPDES No. - NY 0267724	
3.a.. WTC Name - Redux P-853	7.a. Avg/Max Daily Dosage = 1.44 / 3.84 lbs/day

12. WTC Toxicity Info (most sensitive species) - Attach description of endpoint for each EC50.

12.a. Vertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
Cyprinodon variegatus, 96 hr	413.9 mg/l	mg/l	mg/l	mg/l
12.b. Vertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
	mg/l	mg/l	mg/l	mg/l
12.c. Invertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
Mysidopsis bahia, 48 hr	12.5 mg/l	mg/l	mg/l	mg/l
12.d. Invertebrate Species	Acute LC50	Acute EC50	Chronic NOEC	Chronic IC25
	mg/l	mg/l	mg/l	mg/l

13. Summarize measures in place to ensure that excessive levels of WTC are not used -
Redux P-853 is a flocculant polymer used to precipitate iron in this application. The outfall concentration (8b) has been calculated to include the retention of WTC in sludge solids at 95% (5% in discharge).

14. WTCs to be discontinued when use of this WTC begins – Not Applicable

15. Permittee Certification - I certify under penalty of law that this request and all attachments are, to the best of my knowledge and belief, true, accurate and complete. I also certify that the WTC Usage Requirements and any additional requirements specified in the decision letter I will receive will be adhered to.

PRINT NAME - Michael Burghardt	SIGNATURE - Michael Burghardt
TITLE/COMPANY - US East Supervisor / ExxonMobil Oil Corporation	
TELEPHONE - 201-232-4417	EMAIL - michael.j.burghardt@exxonmobil.com

16. WTC Manufacturer Certification - I certify under penalty of law that Sections 1-4, 10-12 and any additional composition documentation submitted with as part of this request are, to the best of my knowledge and belief, true, accurate and complete.

PRINT NAME - Brad Horn	SIGNATURE - Brad Horn
TITLE/COMPANY - President, Redux Technology	
TELEPHONE - 203-823-1002	EMAIL - bhorn@reduxtech.com

Attachment E

Revised Detailed Mixing Zone Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SPDES DISCHARGE PERMIT
Detailed Mixing Zone Form

Clear Form

Purpose & Instructions

The following information will inform the Department's review of your SPDES permit and the resulting effect on the receiving waterbody. Complete the information (one form for each outfall) based on either field observations or schematics/design drawings to the best of your ability. Please see the Mixing Zone Guidance for additional instructions. If an item is unavailable or non-applicable, please describe. Submit with the NY-2A or NY-2C Application Form to SPDESapp@dec.ny.gov.

Facility Name: ExxonMobil Greenpoint Remediation Project SPDES No.: 0267724 Outfall #: 002

NYSDEC Permit Writer: Kirsten Jedd-Barry Receiving Waterbody Class: SD

Email: kirsten.jedd-barry@dec.ny.gov Phone No.: (518) 402-8124

Observation Information

Name & Title of Observer: Alex Policastro Date of Observation: 12/21/2022

Phone Number: (631) 630-2383 Email: apolicastro@rouxinc.com

Name of Receiving Waterbody: Newtown Creek

Weather conditions at time of observation (describe any recent rain/melt events):

None

Avg. Width (ft): 220.0 Avg. Depth (ft): 21.0 Local Depth at Outfall (ft): 2.0 Source: Newtown Creek RIR 2023

Has the receiving waterbody run dry in the last 5 years? ☐Yes ■No

Are tidal conditions present? ■Yes ☐No

Measured Velocity (fps): 0.70 Source or Method: Newtown Creek RIR 2023

Receiving Water Information

All Receiving Waters

Surface Temperature (ºF): 51.5 Bottom Temperature (if depth >10 ft) (ºF): 51.3

Lakes: If receiving waterbody is a lake, attach any available summer and/or winter temperature data.

Describe seasonal variability of receiving waterbody (low-flow conditions, nearby dams, canal operations, stratification):

The Newtown Creek is a tidal influenced estuary and is directly influenced by the tidal flows of the East River. The freshwater flow to the Newtown Creek derives from groundwater, stormwater, and wastewater discharges. The Newtown Creek is approximately 3.8 miles long and feeds into the East River between the neighborhoods of Greenpoint, Brooklyn and Long Island City, Queens. Currently, factories and commercial facilities operate along the creek.

Saline Waterbody

If receiving waterbody is saline (Class SA, SB, SC, SD, I) density information is required.

Surface Density (kg/m^3): 1,002.00 Bottom Density (kg/m^3): 1,006.00

Source of Density Information: field measurement

■Additional information regarding the receiving waterbody is attached (i.e. temperature/ tidal/ density studies).

Effluent Discharge Information

Temperature (ºF): 72.5 AND / OR Density (kg/m^3): Source: Field Measurement

Outfall Location & Configuration

Outfall #: 002 Location at end of pipe: Latitude: 40.728111 Longitude: -73.932349

Describe the outfall (location, size, configuration, condition of the structure):

Outfall 002 is located at the norther terminus of Meeker Ave. The Piping associated with Outfall 002 is constructed of 6" Dia PVC and runs beneath Meeker Avenue before discharging into Newtown Creek. The Pipe penetrates an existing granite bulkhead before elbowing 90 degree downward into Stone Gabion Baskets (to minimize turbidity) approximately 10' above creek bed.

Please select the option below (1 – 3) that best describes your facility's outfall configuration.

☐ I have attached supporting as-built drawings, sketches, or engineering plans to help describe the outfall.

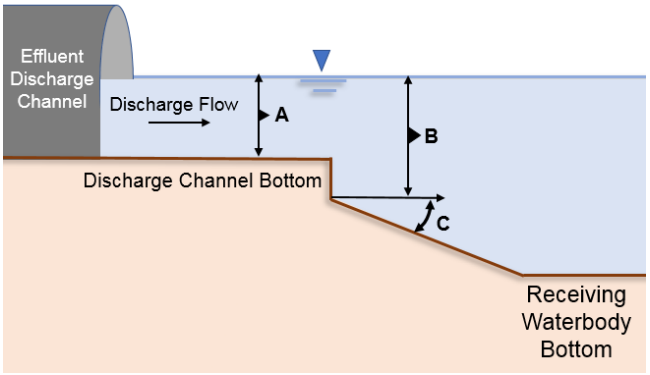
■ **Option #1: Bank Discharge** (outfall pipe/channel does not extend into waterbody).

■ Outfall pipe (6.00 inch diameter) discharges to waterbody at 0.00 feet from bank

- ◉ Outfall pipe is above (or partially above) water surface OR
- ☐ Outfall pipe is submerged and located ____ feet above channel bottom

OR

☐ Channel/ditch (____ft wide x ____ft deep x ____ft long) discharges to waterbody at bank



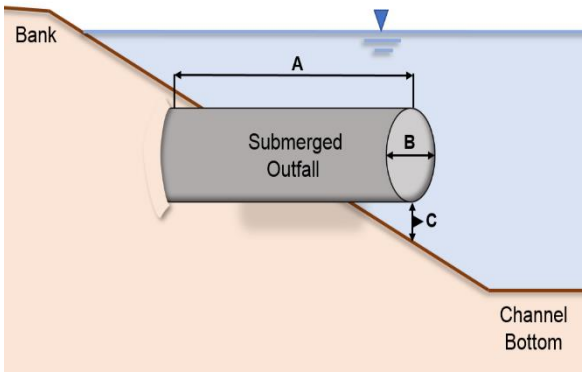
A. Average depth of water in channel (ft): _____

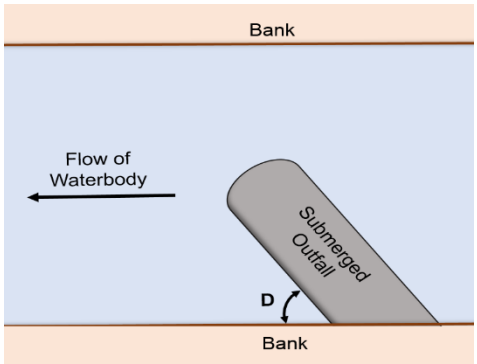
B. Local depth at outfall (ft): _____

C. Bottom slope (degrees): _____

Source: _____

☐ **Option #2: Extended Pipe Discharge** (outfall pipe extends into waterbody) with **no** multiport diffuser.





Source

A. Distance from bank to end of pipe (ft): _____ _____

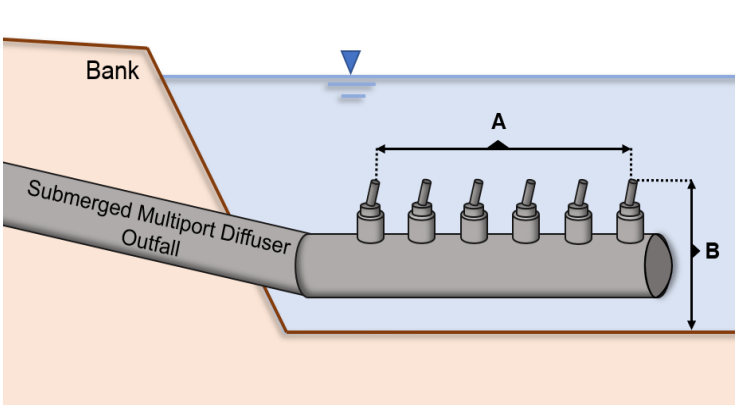
B. Outfall pipe diameter (in): _____ _____

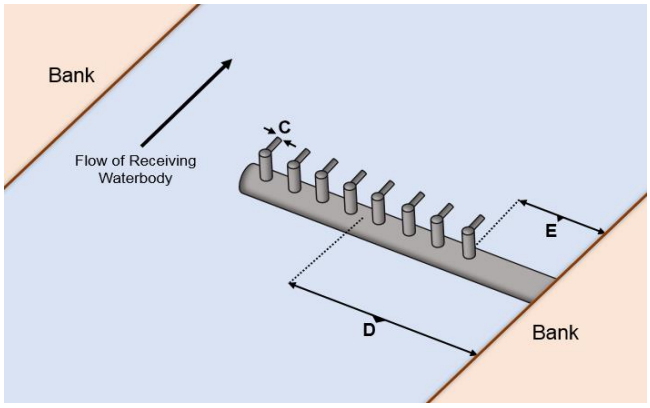
C. Distance from bottom of outfall pipe to immediate bottom of channel (ft): _____ _____

D. Angle between bank and outfall: _____ _____

☐ **Option #3: Extended Pipe Discharge** (outfall pipe extends into waterbody) **with** multiport diffuser.

☐ Attach a detailed drawing of the diffuser (required). If not available, please contact the DEC permit writer.



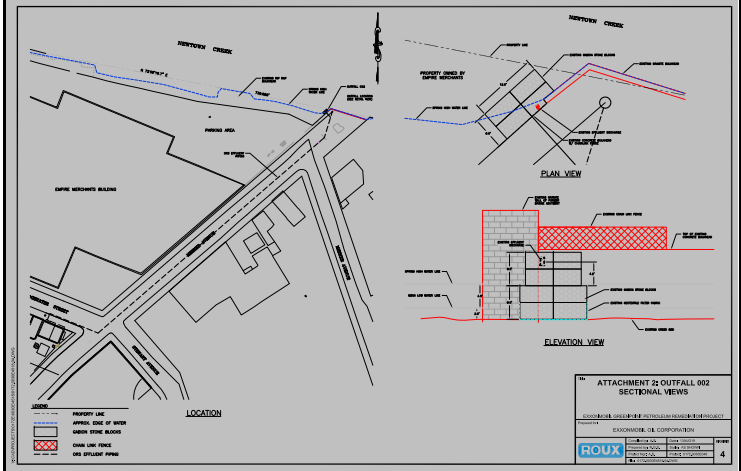


No. of openings: _____ Orientation: ☐ Unidirectional ☐ Alternating Direction: ☐ Line ☐ Fanned out

		Source
A.	Length of diffuser line (ft):	
B.	Height of discharge (top of diffuser nozzle to channel bottom) (ft):	
C.	Diameter of nozzles (in):	
D.	Distance from bank to middle of diffuser line (ft):	
E.	Distance from bank to first diffuser nozzle (ft):	

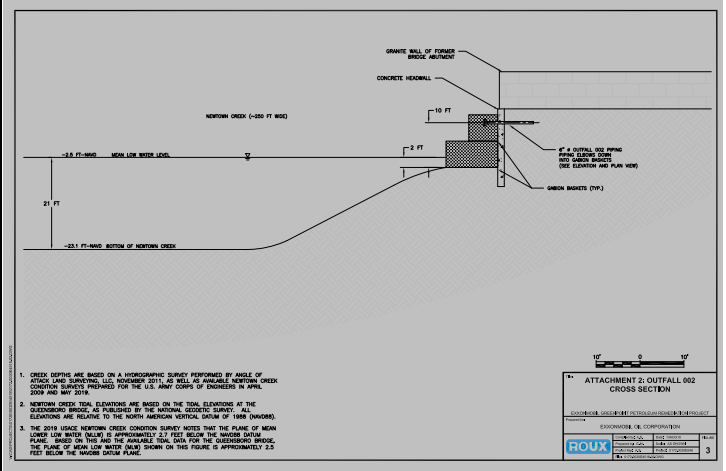
Outfall Photos & Schematics

Upload or attach photos/schematics that depict the outfall (i.e. satellite images, hand sketches, design drawings, view upstream/downstream). **You will be prompted twice to select your photo / schematic.** You may upload more than two photos by repeating this process. They will be included as attachments.



Click to Upload Photos

Section View of Outfall 002



Click to Upload Photos

Cross section of Outfall 002

Description:

Description:

Attachment F

Form 70-0117
"Demonstration: Consideration of Future Physical Climate Risk"

SPDES Permit Application Supplemental Information Form

§ 70-0117 Demonstration: Consideration of Future Physical Climate Risk

Following the 2019 Climate Leadership and Community Protection Act (Climate Act), which amended the 2014 Community Risk and Resiliency Act (CRRA), SPDES permit applicants for "major" projects[1] are required to demonstrate consideration of future physical climate risks, including those due to sea level rise, storm surges, and flooding. This form has been developed to assess relevant information to comply with the requirements to consider climate risks.

Applicants should review the Flood Risk Management Guidance or Asset Management Guide for Publicly Owned Treatment Works to identify current and future flood elevations, and to review examples of risk mitigation strategies. The community Floodplain Administrator may be a good resource and can be found by emailing DEC at floodplain@dec.ny.gov.

For all fields provided below, applicants may attach additional sheets as necessary.

Facility

1. a. Facility name	ExxonMobil Greenpoint Petroleum Remediation Pro	b. SPDES No.	NY 0267724

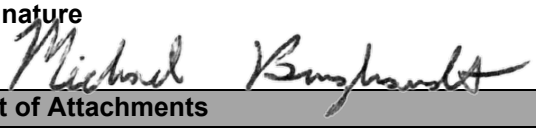
2. a. Does the facility discharge to a tidal waterbody? (Y/N)	Y	b. If yes, what is the high projection for sea level rise (SLR) in 6 NYCRR 490 for the regional area? (feet)	10 inches

3. Please describe the type and extent of any past flooding events at the facility.	No Past Flood events of note
4. What are the applicable Flood Insurance Rate Map (FIRM) Nos. and effective dates?	3604970206F effective date 9/5/2007
5. a. Is any portion of the facility located in a FEMA designated flood zone? If yes, what is the zone type? If no, are there adjacent flood zones that could be considered or skip to question 6.	No, site is Located outside of Zone X, and approximately 350' to the nearest adjacent Flood plane (Newtown creek (Zone X, & Zone AE)
b. What is the lowest ground elevation at the facility? (ft)	
c. What is the Base Flood Elevation (BFE) at the facility? (ft)	
d. What is the **Future BFE** for the facility based on the NYS Flood Risk Management Guidance? *Tidal Areas: BFE + SLR (Method 4) Non-Tidal Areas: Q100 (Method 3 or use available flood profiles from Flood Insurance maps)*	
e. What is the target elevation for critical equipment? **Future BFE** + 3 feet	
f. Compare questions **5.b.** and **5.e.** Is the target elevation greater than the lowest ground elevation?	
6. What climate risk mitigation measures are in place at the facility? Are any future projects anticipated that provide further opportunity to address climate risk?	One of the existing EMGPRP facilities is being relocated from 400 Kingsland Avenue which is within a designated Flood Zone A. The new location at 38 Varick Street will place the treatment facility outside of any designated Flood Zones in the area which will limit exposure to future climate related flood risk.
7. For applications involving facility changes, have any other types of future physical climate risks been considered, including tropical and extratropical cyclones, wind, and changes in average/peak precipitation and temperature?	The location of the new facility at 38 Varick Street limits potential flood related risk by being positioned outside of the existing designated flood zone. The existing facility located at 400 Kingsland Avenue is within a designated flood zone. As such, the new facility at 38 Varick Street outside of the designated flood zone is anticipated to mitigate the potential physical climate risks associated with the existing facility located at the 400 Kingsland Avenue property.

[1] "Major" projects are those identified in Uniform Procedures Act regulations at 6 NYCRR 621.4.

Pump/Lift Station(s)	
8. Are there pump/lift station(s) owned by the permittee? If yes, how many? If no, skip to Certification	No
9. Please describe the type and extent of any past flooding events at the pump/lift station(s).	
10. What are the applicable Flood Insurance Rate Map (FIRM) Nos. and effective dates?	
11. a. Are any pump/lift stations located in a FEMA designated flood zone? If yes, which stations and what zone type? If no, skip to question 11	
b. What is the lowest ground elevation at each pump/lift station? (ft)	
c. What are the BFEs, future BFEs, and target elevations for critical equipment (future BFE + 3 ft) for each pump/lift station?	
d. Compare questions **10.b.** and **10.c.** Are any pump/lift stations below the target elevation?	
12. What climate risk mitigation strategies are in place at the pump/lift stations? Are any future projects anticipated that provide further opportunity to address climate risk?	

Certification Statement	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	✔
I have demonstrated consideration of current and future physical climate risk.	✔

Name (print or type first and last name)	**Official Title**
Michael Burghardt	US East Supervisor, Agent and Attorney-in-Fact EMOC
Signature 	**Date Signed** 2/15/2024

List of Attachments

Additional Resources/Information

- Flood Risk Management Guidance - https://www.dec.ny.gov/energy/102559.html
- Estimating Guideline Elevations - https://www.dec.ny.gov/docs/administration_pdf/crraestelevguidelines.pdf
- Asset Management Guide - https://www.dec.ny.gov/chemical/101412.html
- Sea Level Rise Projections - https://www.dec.ny.gov/regulations/103877.html
- Ground Elevations - https://ngmdb.usgs.gov/topoview/viewer/#13/43.2885/-74.4839
- Flood Insurance Rate Maps - https://msc.fema.gov/portal/home
- Ten State Standards – https://www.health.state.mn.us/communities/environment/water/docs/tenstates/tenstatestan2014.pdf
- TR-16 – https://neiwpcc.org/learning-center/tr-16-guides-design-wastewater-treatment-works/

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' National Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was New York State Plane FIPSZONE 3104. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the National Geodetic Vertical Datum of 1929. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3182
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by the Department of Information Technology and Telecommunication, City of New York. This information was derived from digital orthophotos produced at a scale of 1':1,200 with 2-foot pixel resolution from photography dated 2004.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map showing the layout of map panels for this jurisdiction.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the National Geodetic Vertical Datum of 1929

A23	Cross section line
A23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
2°76'000"N	1000-meter Universal Transverse Mercator grid values, zone 18
600000 FT	5000-foot grid ticks: New York State Plane coordinate system, Long Island zone (FIPSZONE 3104), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

INITIAL NFIP MAP DATE
June 28, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS
June 11, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE
November 16, 1983

FLOOD INSURANCE RATE MAP REVISIONS
September 5, 2007 - to update map format, to change Special Flood Hazard Areas, and to reflect updated topographic information

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0206F

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
NEW YORK, NEW YORK
BRONX, RICHMOND, NEW YORK, QUEENS, AND KINGS COUNTIES

PANEL 206 OF 457

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEW YORK, CITY OF	360497	0206	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
3604970206F

MAP REVISED
SEPTEMBER 5, 2007

Federal Emergency Management Agency