United States Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, Massachusetts 02109-3912
ATTN: Remediation General Permit NOI Processing

Arcadis U.S., Inc.
One Executive Drive, Suite 303
Chelmsford, MA 02446
Tel 978.937.9999
www.arcadis.com

Subject:
Notice of Intent (NOI) – Remediation General Permit (RGP)
631 Airport Road, Fall River, Massachusetts

ENVIRONMENT

Dear Sir/Madam:

On behalf of Signify North America Corp. (Signify), Arcadis U.S. Inc. (Arcadis) is submitting the enclosed Notice of Intent (NOI) under the Massachusetts Remediation General Permit (RGP) for permitting of the extracted and treated groundwater intended to be discharged to a drainage swale located at 631 Airport Road in Fall River, Massachusetts. The groundwater treatment system is expected to be installed in December 2020.

The treated groundwater will be discharged directly to a drainage swale located next to the installed treatment system which ultimately discharges to Steep Brook. The remediation is being conducted in accordance with the Modified Phase IV Remedy Implementation Plan for the release site managed under Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number 4-0016359.

Please feel free to contact us with any questions or concerns.

Sincerely,

Arcadis U.S., Inc.

Brian Therriault, P.E.
Principal Engineer

Date:
December 2, 2020

Contact:
Brian Therriault

Phone:
978.322.4534

Email:
brian.therriault@arcadis.com

Our ref:
30056881

Attachments:
Notice of Intent (with attachments)

Copies:

Dean Weeks (Signify)	dean.weeks@signify.com
Mark Wood (MassDEP)	mark.wood@state.ma.us
Rosemary Knox (MassDEP)	rosemary.knox@state.ma.us
Hon. Paul E. Coogan (Mayor)	mayor@fallriverma.org
Thomas Cory (City of Fall River BOH)	healthdepartment@fallriverma.org
Janet Keating-Connolly, LSP (Arcadis)	janet.connolly@arcadis.com

II. Suggested Format for the Remediation General Permit Notice of Intent (NOI)

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
Former Lightolier Facility</td><td colspan="3">Site address:
Street: 631 Airport Road</td></tr>
<tr><td>City: Fall River</td><td>State: MA</td><td>Zip: 02720</td></tr>
<tr><td rowspan="4">2. Site owner
Signify North America Corp.

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Dean Weeks</td></tr>
<tr><td colspan="2">Telephone: Dean Weeks</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street: 200 Franklin Square Drive</td></tr>
<tr><td>City: Somerset</td><td>State: NJ</td><td>Zip: 08873</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Arcadis</td><td colspan="3">Contact Person: Janet Keating-Connolly</td></tr>
<tr><td colspan="2">Telephone: 978-322-4553</td><td>Email: janet.connolly@arcadis.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 1 Executive Drive, Suite 303</td></tr>
<tr><td>City: Chelmsford</td><td>State: MA</td><td>Zip: 01824</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
NA

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
4-0000553, 4-0016359
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Steep Brook, Taunton River	Steep Brook - not classified, Taunton River Segment MA62-04	Steep Brook - not classified, Taunton River - 314 CMR 4.05 (4) (b) class SB (R)(CSO)

Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River

2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ■ Yes ☐ No

Are sensitive receptors present near the site? (check one): ☐ Yes ■ No
If yes, specify:

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. Steep Brook not listed,

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	0.000549 cfs
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	1.01

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: 11/20/20 - design flow was subsequently lowered from 50 to 25 gpm, waiting for confirmation from DEP on revised DF of 1.01

7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No

C. Source water information:

1. Source water(s) is (check any that apply):

■ Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No	☐ Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No	☐ The receiving water ☐ A surface water other than the receiving water; if so, indicate waterbody:	☐ Potable water; if so, indicate municipality or origin: ☐ Other; if so, specify:

2. Source water contaminants: trace VOCs, metals	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ■ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Outfall 001	Outfall location(s): (Latitude, Longitude) 41.742337, -71.117631
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: System discharges into swale that drains into Steep Brook ☐ A private storm sewer system ☐ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ☐ Yes ■ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): December 2020 to December 2022 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="5">■ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
☐ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

■ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
■ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>☐ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	350.1		0.63	0.63	Report mg/L	---
Chloride		✔	1	300.0	840	170000	170000	Report µg/l	---
Total Residual Chlorine	✔		1	SM 4500	400	<400	<400	0.2 mg/L	11
Total Suspended Solids		✔	1	SM 2540D		13	13	30 mg/L	---
Antimony	✔		1	200.8	1.3	<3.0	<3.0	206 µg/L	
Arsenic		✔	1	200.8	0.15	0.42J	0.42J	104 µg/L	
Cadmium	✔		1	200.8	0.15	<0.50	<0.50	10.2 µg/L	
Chromium III	✔		1	200.8	5.0	<5.0	<5.0	323 µg/L	
Chromium VI	✔		1	218.6	0.30	<0.30	<0.30	323 µg/L	
Copper	✔		1	200.8	0.63	<2.0	<2.0	242 µg/L	
Iron		✔	1	200.8	38	9000	9000	5,000 µg/L	1010
Lead	✔		1	200.8	0.16	<0.50	<0.50	160 µg/L	
Mercury	✔		1	245.1.8	0.091	<0.20	<0.20	0.739 µg/L	
Nickel	✔		1	200.8	0.92	<2.0	<2.0	1,450 µg/L	
Selenium	✔		1	200.8	1.1	<2.5	<2.5	235.8 µg/L	
Silver	✔		1	200.8	0.078	<0.50	<0.50	35.1 µg/L	
Zinc		✔	1	200.8	8.1	8.4J	8.4J	420 µg/L	
Cyanide	✔		1	SM 4500	10	<10	<10	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	624.1	2.2	<20	<20	100 µg/L	---
Benzene	✔		1	624.1	1.2	<10	<10	5.0 µg/L	---
1,4 Dioxane	✔		1	8260C	0.33	<0.40	<0.40	200 µg/L	---
Acetone		✔	1	624.1	4.0	14J	14J	7.97 mg/L	---
Phenol	✔		1	624.1	50	<50	<50	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	624.1	1.0	<10	<10	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	624.1	0.89	<10	<10	600 µg/L	---
1,3 Dichlorobenzene	✔		1	624.1	1.1	<10	<10	320 µg/L	---
1,4 Dichlorobenzene	✔		1	624.1	1.0	<10	<10	5.0 µg/L	---
Total dichlorobenzene	✔		1	624.1	0.89	<10	<10	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624.1	1.7	<10	<10	70 µg/L	---
1,2 Dichloroethane	✔		1	624.1	10	<10	<10	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	624.1	10	<10	<10	3.2 µg/L	---
Ethylene Dibromide	✔		1	8260C	0.0079	<0.020	<0.020	0.05 µg/L	---
Methylene Chloride	✔		1	624.1	1.6	<10	<10	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624.1	0.77	<10	<10	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624.1	0.96	<10	<10	5.0 µg/L	---
Trichloroethylene		✔	1	624.1	1.2	<10	<10	5.0 µg/L	---
Tetrachloroethylene	✔		1	624.1	0.68	<10	<10	5.0 µg/L	
cis-1,2 Dichloroethylene		✔	1	624.1	1.1	130	130	70 µg/L	---
Vinyl Chloride		✔	1	624.1	1.5	26	26	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625.1	50	<50	<50	190 µg/L	
Diethylhexyl phthalate	✔		1	625.1	12	<100	<100	101 µg/L	
Total Group I PAHs	✔		1	625.1	50	<50	<50	1.0 µg/L	---
Benzo(a)anthracene	✔		1	625.1	11	<50	<500	As Total PAHs	
Benzo(a)pyrene	✔		1	625.1	13	<50	<50		
Benzo(b)fluoranthene	✔		1	625.1	12	<50	<50		
Benzo(k)fluoranthene	✔		1	625.1	13	<50	<50		
Chrysene	✔		1	625.1	10	<50	<50		
Dibenzo(a,h)anthracene	✔		1	625.1	15	<50	<50		
Indeno(1,2,3-cd)pyrene	✔		1	625.1	15	<50	<50		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔		1	625.1	50	<50	<50	100 µg/L	---
Naphthalene	✔		1	625.1	8.6	<50	<50	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608.3	0.57	<0.57	<0.57	0.000064 µg/L	---
Pentachlorophenol	✔		1	625.1	16	<100	<100	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664A	5.0	<5.0	<5.0	5.0 mg/L	---
Ethanol	✔		1	8260C	200	<200	<200	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	8260C	0.64	<4.0	<4.0	70 µg/L	
tert-Butyl Alcohol	✔		1	624.1	23	<200	<200	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	8260C	1.1	<4.0	<4.0	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH			6.57						
Temperature			25 deg C						

E. Treatment system information

1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ■ Air Stripping ☐ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption
☐ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
The treatment system consists of an oil-water separator, an air stripper, and effluent bag filtration. The treated water is being directed to a drainage swale that drains into Steep Brook.

Identify each major treatment component (check any that apply):
☐ Fractionation tanks☐ Equalization tank ■ Oil/water separator ☐ Mechanical filter ☐ Media filter
☐ Chemical feed tank ■ Air stripping unit ■ Bag filter ☐ Other; if so, specify:

Indicate if either of the following will occur (check any that apply):
☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: air stripper Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	25 gpm
Provide the proposed maximum effluent flow in gpm.	25 gpm
Provide the average effluent flow in gpm.	15 gpm
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): ■ Yes ☐ No

F. Chemical and additive information

1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:

2. Provide the following information for each chemical/additive, using attachments, if necessary:

a. Product name, chemical formula, and manufacturer of the chemical/additive;
b. Purpose or use of the chemical/additive or remedial agent;
c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).

3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): ☐ Yes ☐ No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive? (check one): ☐ Yes ■ No

G. Endangered Species Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

■ **FWS Criterion A**: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the "action area".

☐ **FWS Criterion B**: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): ☐ Yes ☐ No; if no, is consultation underway? (check one): ☐ Yes ☐ No

☐ **FWS Criterion C**: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) ■ the operator ☐ EPA ☐ Other; if so, specify:

☐ **NMFS Criterion**: A determination made by EPA is affirmed by the operator that the discharges and related activities will have "no effect" or are "not likely to adversely affect" any federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and will not result in any take of listed species. Has the operator previously completed consultation with NMFS? (check one): ☐ Yes ☐ No

2. Has the operator attached supporting documentation of ESA eligibility in accordance with the instructions in Appendix I, and G, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written concurrence or finding provided by the Services? (check one): ☐ Yes ☐ No; if yes, attach.

H. National Historic Preservation Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

■ **Criterion A**: No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.

☐ **Criterion B**: Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.

☐ **Criterion C**: Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the operator will carry out to mitigate or prevent any adverse effects on historic properties? (check one): ☐ Yes ■ No

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

Please see attached for an NOI summary and supporting documentation.

Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ■ Yes ☐ No

J. Certification requirement

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 gathered and evaluated 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 have no personal knowledge that the information submitted is other than 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.

BMPP 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.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ☐ No ☐ NA ■
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ■ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ■ No ☐ NA ☐
Signature: 	Date: 12/2/2020
Print Name and Title: Brian Therriault, Principal Engineer	

Section B(6) – Receiving Water Analytical Results

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 480-161531-3
Client Project/Site: Lightolier
Revision: 1

For:
ARCADIS U.S., Inc.
1 Executive Drive
Suite 303
Chelmsford, Massachusetts 01824

Attn: Janet Connolly

Authorized for release by:
12/17/2019 8:48:54 AM

Becky Mason, Project Manager II
(413)572-4000
becky.mason@testamericainc.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Job ID: 480-161531-3
Project/Site: Lightolier

Qualifiers

Metals

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

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Job ID: 480-161531-3

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-161531-3

Revised report: Added Zn and Sb per client request to 6010 list.

Receipt
The samples were received on 10/25/2019 8:00 AM and 11/23/2019 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4º C and 3.2º C.

Metals
Method 6010: At the request of the client, an abbreviated MCP analyte list was reported for this job.

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

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

MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Buffalo** Project #: **480-161531-3**

Project Location: **Lightolier** RTN:

This form provides certifications for the data set for the following Laboratory Sample ID Number(s):

480-161531-1 and 480-163218-1

Matrices: ■ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocols (check all that apply below):

8260 VOC CAM II A ☐	7470/7471 Hg CAM III B ■	Mass DEP VPH CAM IV A ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	Mass DEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	Mass DEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ■	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9012 / 9014/ 4500CN Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	■ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	■ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	■ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	■ Yes ☐ No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	■ Yes ☐ No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	■ Yes ☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	■ Yes ☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	☐ Yes ■ No[1]

[1] All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature:  Position: Project Manager

Printed Name: Becky Mason Date: 12/3/19 11:37

This form has been electronically signed and approved

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Client Sample ID: STEEP BROOK — Lab Sample ID: 480-161531-1

No Detections.

Client Sample ID: STEEP BROOK — Lab Sample ID: 480-163218-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.022		0.010	0.00070	mg/L	1		6010	Total/NA
Zinc	0.018	J	0.050	0.0015	mg/L	1		6010	Total/NA
Chlorine, Total Residual	210	J HF	400	72	ug/L	1		SM 4500 Cl F	Total/NA

This Detection Summary does not include radiochemical test results.

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Client Sample ID: STEEP BROOK

Lab Sample ID: 480-161531-1

Date Collected: 10/24/19 11:45

Matrix: Water

Date Received: 10/25/19 08:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.10	0.068	mg/L			10/30/19 16:18	1

Client Sample ID: STEEP BROOK

Lab Sample ID: 480-163218-1

Date Collected: 11/21/19 13:20

Matrix: Water

Date Received: 11/23/19 08:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0056	mg/L		11/27/19 09:00	11/27/19 23:53	1
Barium	**0.022**		0.010	0.00070	mg/L		11/27/19 09:00	11/27/19 23:53	1
Cadmium	ND		0.0010	0.00050	mg/L		11/27/19 09:00	11/27/19 23:53	1
Chromium	ND		0.0050	0.0010	mg/L		11/27/19 09:00	11/27/19 23:53	1
Silver	ND		0.0050	0.0017	mg/L		11/27/19 09:00	11/27/19 23:53	1
Lead	ND		0.0050	0.0030	mg/L		11/27/19 09:00	11/27/19 23:53	1
Selenium	ND		0.010	0.0087	mg/L		11/27/19 09:00	11/27/19 23:53	1
Antimony	ND		0.020	0.0068	mg/L		11/27/19 09:00	11/27/19 23:53	1
Zinc	**0.018**	**J**	0.050	0.0015	mg/L		11/27/19 09:00	11/27/19 23:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/02/19 11:56	12/02/19 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorine, Total Residual	**210**	**J HF**	400	72	ug/L			12/02/19 10:22	1

Method: 6010 - Metals (ICP)

Lab Sample ID: MB 480-506825/1-A
Matrix: Water
Analysis Batch: 507281

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 506825

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0056	mg/L		11/27/19 09:00	11/27/19 22:34	1
Barium	ND		0.010	0.00070	mg/L		11/27/19 09:00	11/27/19 22:34	1
Cadmium	ND		0.0010	0.00050	mg/L		11/27/19 09:00	11/27/19 22:34	1
Chromium	ND		0.0050	0.0010	mg/L		11/27/19 09:00	11/27/19 22:34	1
Silver	ND		0.0050	0.0017	mg/L		11/27/19 09:00	11/27/19 22:34	1
Lead	ND		0.0050	0.0030	mg/L		11/27/19 09:00	11/27/19 22:34	1
Selenium	ND		0.010	0.0087	mg/L		11/27/19 09:00	11/27/19 22:34	1
Antimony	ND		0.020	0.0068	mg/L		11/27/19 09:00	11/27/19 22:34	1
Zinc	ND		0.050	0.0015	mg/L		11/27/19 09:00	11/27/19 22:34	1

Lab Sample ID: LCS 480-506825/2-A
Matrix: Water
Analysis Batch: 507281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 506825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.200	0.192		mg/L		96	80 - 120
Barium	0.200	0.201		mg/L		101	80 - 120
Cadmium	0.200	0.192		mg/L		96	80 - 120
Chromium	0.200	0.196		mg/L		98	80 - 120
Silver	0.0500	0.0475		mg/L		95	80 - 120
Lead	0.200	0.187		mg/L		94	80 - 120
Selenium	0.200	0.184		mg/L		92	80 - 120
Antimony	0.200	0.210		mg/L		105	80 - 120
Zinc	0.200	0.199		mg/L		100	80 - 120

Lab Sample ID: LCSD 480-506825/3-A
Matrix: Water
Analysis Batch: 507281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 506825

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.200	0.194		mg/L		97	80 - 120	1	20
Barium	0.200	0.209		mg/L		105	80 - 120	4	20
Cadmium	0.200	0.195		mg/L		97	80 - 120	1	20
Chromium	0.200	0.196		mg/L		98	80 - 120	0	20
Silver	0.0500	0.0493		mg/L		99	80 - 120	4	20
Lead	0.200	0.192		mg/L		96	80 - 120	2	20
Selenium	0.200	0.186		mg/L		93	80 - 120	1	20
Antimony	0.200	0.209		mg/L		105	80 - 120	0	20
Zinc	0.200	0.200		mg/L		100	80 - 120	1	20

Lab Sample ID: 480-163218-1 MS
Matrix: Water
Analysis Batch: 507281

Client Sample ID: STEEP BROOK
Prep Type: Total/NA
Prep Batch: 506825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.200	0.193		mg/L		97	75 - 125
Barium	0.022		0.200	0.226		mg/L		102	75 - 125
Cadmium	ND		0.200	0.196		mg/L		98	75 - 125
Chromium	ND		0.200	0.195		mg/L		97	75 - 125

Method: 6010 - Metals (ICP) (Continued)

Lab Sample ID: 480-163218-1 MS
Matrix: Water
Analysis Batch: 507281

Client Sample ID: STEEP BROOK
Prep Type: Total/NA
Prep Batch: 506825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	ND		0.0500	0.0497		mg/L		99	75 - 125
Lead	ND		0.200	0.193		mg/L		97	75 - 125
Selenium	ND		0.200	0.186		mg/L		93	75 - 125
Antimony	ND		0.200	0.212		mg/L		106	75 - 125
Zinc	0.018	J	0.200	0.219		mg/L		100	75 - 125

Lab Sample ID: 480-163218-1 MSD
Matrix: Water
Analysis Batch: 507281

Client Sample ID: STEEP BROOK
Prep Type: Total/NA
Prep Batch: 506825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.200	0.195		mg/L		98	75 - 125	1	20
Barium	0.022		0.200	0.224		mg/L		101	75 - 125	1	20
Cadmium	ND		0.200	0.195		mg/L		97	75 - 125	1	20
Chromium	ND		0.200	0.194		mg/L		97	75 - 125	0	20
Silver	ND		0.0500	0.0481		mg/L		96	75 - 125	3	20
Lead	ND		0.200	0.193		mg/L		96	75 - 125	0	20
Selenium	ND		0.200	0.188		mg/L		94	75 - 125	1	20
Antimony	ND		0.200	0.209		mg/L		104	75 - 125	1	20
Zinc	0.018	J	0.200	0.221		mg/L		101	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-507619/1-A
Matrix: Water
Analysis Batch: 507712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 507619

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/02/19 11:56	12/02/19 15:34	1

Lab Sample ID: LCS 480-507619/2-A
Matrix: Water
Analysis Batch: 507712

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 507619

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00675		mg/L		101	80 - 120

Lab Sample ID: LCSD 480-507619/3-A
Matrix: Water
Analysis Batch: 507712

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 507619

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00667	0.00693		mg/L		104	80 - 120	3	20

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 460-651520/12
Matrix: Water
Analysis Batch: 651520

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.10	0.068	mg/L			10/30/19 16:09	1

Lab Sample ID: LCS 460-651520/13
Matrix: Water
Analysis Batch: 651520

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.00	1.87		mg/L		94	89 - 113		

Method: SM 4500 Cl F - Chlorine, Residual

Lab Sample ID: MB 460-659487/1
Matrix: Water
Analysis Batch: 659487

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorine, Total Residual	ND		400	72	ug/L			12/02/19 10:00	1

Lab Sample ID: LCSSRM 460-659487/2
Matrix: Water
Analysis Batch: 659487

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

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorine, Total Residual			1220	1230		ug/L		100.8	82.8 - 113. 1		

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Metals

Prep Batch: 506825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163218-1	STEEP BROOK	Total/NA	Water	3005A	
MB 480-506825/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-506825/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-506825/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
480-163218-1 MS	STEEP BROOK	Total/NA	Water	3005A	
480-163218-1 MSD	STEEP BROOK	Total/NA	Water	3005A	

Analysis Batch: 507281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163218-1	STEEP BROOK	Total/NA	Water	6010	506825
MB 480-506825/1-A	Method Blank	Total/NA	Water	6010	506825
LCS 480-506825/2-A	Lab Control Sample	Total/NA	Water	6010	506825
LCSD 480-506825/3-A	Lab Control Sample Dup	Total/NA	Water	6010	506825
480-163218-1 MS	STEEP BROOK	Total/NA	Water	6010	506825
480-163218-1 MSD	STEEP BROOK	Total/NA	Water	6010	506825

Prep Batch: 507619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163218-1	STEEP BROOK	Total/NA	Water	7470A	
MB 480-507619/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-507619/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 480-507619/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 507712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163218-1	STEEP BROOK	Total/NA	Water	7470A	507619
MB 480-507619/1-A	Method Blank	Total/NA	Water	7470A	507619
LCS 480-507619/2-A	Lab Control Sample	Total/NA	Water	7470A	507619
LCSD 480-507619/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	507619

General Chemistry

Analysis Batch: 651520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-1	STEEP BROOK	Total/NA	Water	350.1	
MB 460-651520/12	Method Blank	Total/NA	Water	350.1	
LCS 460-651520/13	Lab Control Sample	Total/NA	Water	350.1	

Analysis Batch: 659487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163218-1	STEEP BROOK	Total/NA	Water	SM 4500 Cl F	
MB 460-659487/1	Method Blank	Total/NA	Water	SM 4500 Cl F	
LCSSRM 460-659487/2	Lab Control Sample	Total/NA	Water	SM 4500 Cl F	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Client Sample ID: STEEP BROOK

Lab Sample ID: 480-161531-1

Date Collected: 10/24/19 11:45

Matrix: Water

Date Received: 10/25/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	651520	10/30/19 16:18	AJP	TAL EDI

Client Sample ID: STEEP BROOK

Lab Sample ID: 480-163218-1

Date Collected: 11/21/19 13:20

Matrix: Water

Date Received: 11/23/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			506825	11/27/19 09:00	ADM	TAL BUF
Total/NA	Analysis	6010		1	507281	11/27/19 23:53	AMH	TAL BUF
Total/NA	Prep	7470A			507619	12/02/19 11:56	BMB	TAL BUF
Total/NA	Analysis	7470A		1	507712	12/02/19 15:50	BMB	TAL BUF
Total/NA	Analysis	SM 4500 Cl F		1	659487	12/02/19 10:22	HTV	TAL EDI

Laboratory References:

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

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Massachusetts	State Program	M-NY044	06-30-20

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
6010	3005A	Water	Antimony
6010	3005A	Water	Arsenic
6010	3005A	Water	Barium
6010	3005A	Water	Cadmium
6010	3005A	Water	Chromium
6010	3005A	Water	Lead
6010	3005A	Water	Selenium
6010	3005A	Water	Silver
6010	3005A	Water	Zinc
7470A	7470A	Water	Mercury

Laboratory: Eurofins TestAmerica, Edison

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

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State	<cert No.>	12-31-21
Georgia	State	12028 (NJ)	06-30-20
Massachusetts	State	M-NJ312	06-30-20
Massachusetts	State Program	M-NJ312	06-30-20
New Jersey	NELAP	12028	06-30-20
New York	NELAP	11452	04-01-20
Pennsylvania	NELAP	68-00522	02-28-20
Rhode Island	State	LAO00132	12-30-19
USDA	US Federal Programs	P330-18-00135	05-03-21

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Method	Method Description	Protocol	Laboratory
6010	Metals (ICP)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL EDI
SM 4500 Cl F	Chlorine, Residual	SM	TAL EDI
3005A	Preparation, Total Metals	SW846	TAL BUF
7470A	Preparation, Mercury	SW846	TAL BUF

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

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

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-161531-1	STEEP BROOK	Water	10/24/19 11:45	10/25/19 08:00	
480-163218-1	STEEP BROOK	Water	11/21/19 13:20	11/23/19 08:00	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-3

Login Number: 161531

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Mason, Becky C

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

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-3

Login Number: 161531
List Number: 3
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 10/29/19 11:56 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	988482
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3°C IR9
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.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-3

Login Number: 163218

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Wallace, Cameron

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

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-3

Login Number: 163218
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 11/26/19 12:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	975321
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6/3.9°C IR11
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.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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

360325-Boston

Chain of Custody Record

eurofins | Environment Testing TestAmerica

360325-Buffalo 360325

Client Information	Sampler: Katie Daily	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-137430-30904.1
Client Contact: Janel Connolly	Phone:	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 1 Executive Drive Suite 303	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Chelmsford	TAT Requested (days): P.O 480-16153			
State, Zip: MA, 01824				
Phone:	PO #: BN030015			
Email: Janel.Connolly@arcadis-us.com	WO #:			
Project Name: Lightcliff	Project #: 48012644			
Site:	SSOW#:			

480-161531 Chain of Custody

J - DI Water; K - EDTA; L - EDA; 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)	8270D_SIM - 8270 SIM	350.1 - Nitrogen, Ammonia	4500_Cl_F - Chlorine, Residual	8260C_SIM - EDB/1,4 Dioxane SIM	2540D - TSS	1664A_NP - 1664	300_ORGFM_28D - Chloride	624_5ml - VOC	8260C - MTBE / TAME/ Ethanol	625 - SVOC	608_PCB - PCB	200.8, 245.1	420.4 - Phenol	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	S	N	A	N	A	N	A	A	N	N	D	S		
Steep Brook	10/24/19	11:45	G	Water				1	1									1		3	
MW-11	10/24/19	1:58pm	G	Water			2	1	1	2	1	2	1	3	3	2	2	1	1	22	

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
Katie Daily	10/24/19 16-	Arcadis		10/24/19 16:	TA
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/24/19 17-	TA	Cwallace	10/26/19 0800	TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: #1 3.2

Ver: 01/16/2019

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

360325-Boston

Chain of Custody Record

360325-Boston

eurofins | Environment TestAmerica

Client Information	Sampler: Kathe Daley	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-137430-30904.2
Client Contact: Janet Connolly	Phone:	E-Mail: becky.mason@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:

Address: 1 Executive Drive Suite 303	Due Date Requested:
City: Chelmsford	TAT Requested (days): P.O. 480-16153
State, Zip: MA, 01824	PO #: BN030015
Phone:	WO #:
Email: Janet.Connolly@arcadis-us.com	Project #: 48012644
Project Name: Lightolier	SSOW#:
Site:	

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)	218.6 - Chromium, Hexavalent	4500_CN_E - Cyanide, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	B		
				Water						
MW-11	10/24/19	2:00	G	Water			1	1	2	

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
Kathe Daley	10/24/19 16	TA		10/24/19 16	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/24/19 17	TA	Cwalker	10/26/19 0800	TA3
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: 01/16/2019

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

Chain of Custody Record

360325-Boston

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Adam Finkelman	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-138367-31120.1
Client Contact: Tom Duffy	Phone: 401-743-3773	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 1
Company: ARCADIS U.S., Inc				Job #:
Address: 30 Braintree Hill Office Park Suite 105	Due Date Requested: Standard	Analysis Request		
City: Braintree	TAT Requested (days):			
State, Zip: MA, 02184				
Phone:	PO #: 30029624			
Email: tom.duffy@arcadis-us.com	WO #: Task 08ANA			
Project Name: Lightolier	Project #: 48012644			
Site:	SSOW#:			

480-163218 Chain of Custody

H - Ascorbic Acid | I - Ice | J - DI Water | K - EDTA | L - EDA | 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)	Residual Chlorine	RCRA 8 Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Steep Brook	11/21/19	1320	G	Water			✓	✓		
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						

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) MassDEP CAM

Special Instructions/QC Requirements:

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

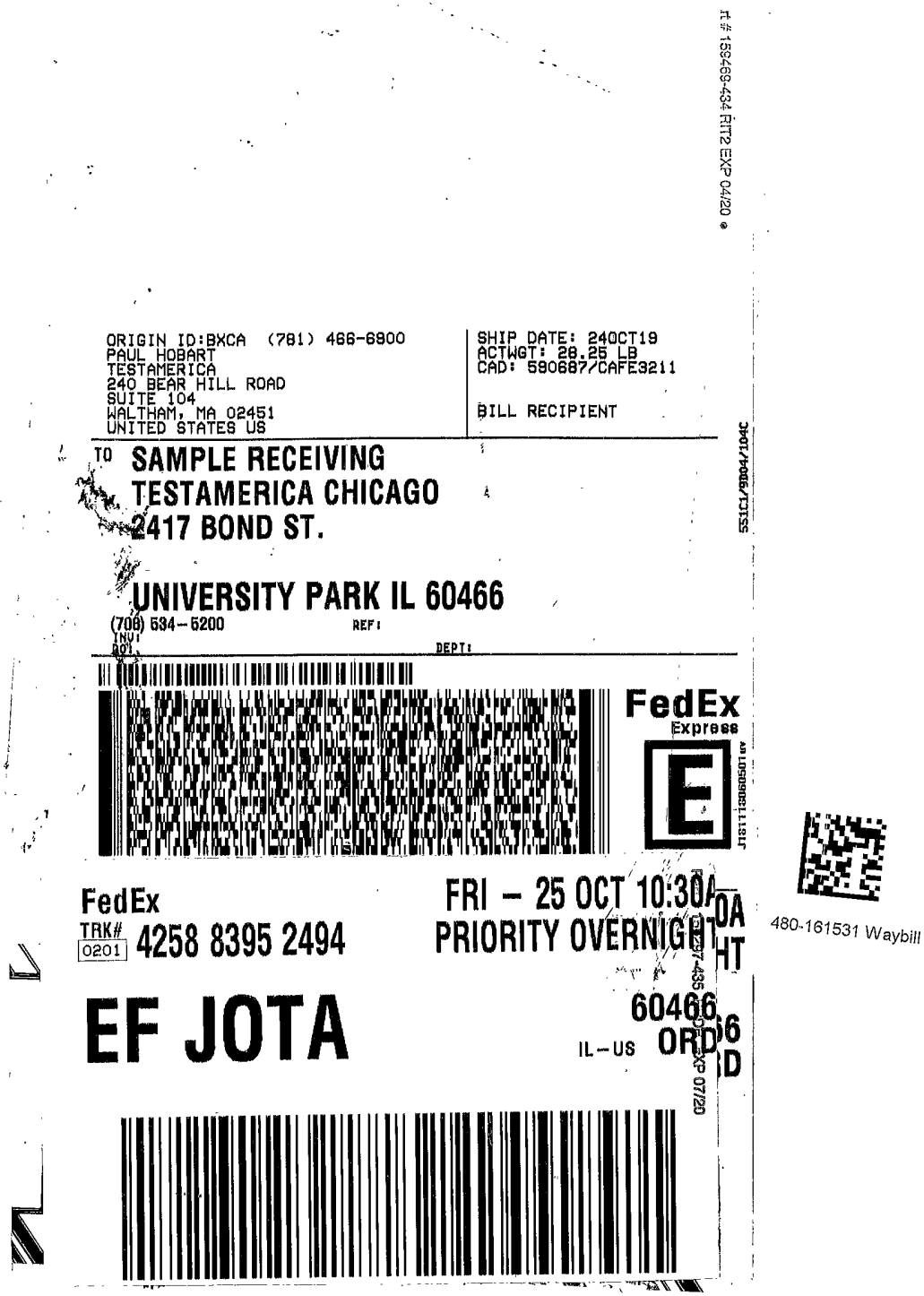
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		11/22/19 12:50	Arcadis		11/22/19 13:00	TA
2		11/22/19 16:30	TA		11/23/19 0900	TAB
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: #1 2.4

Ver: 01/16/2019

12/17/2019 (Rev. 1)



480-161531 Waybill

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

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-53365.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: becky.mason@testamericainc.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Massachusetts		Job #: 480-163218-1
Address: 777 New Durham Road, ,	Due Date Requested: 11/29/2019	Analysis Requested		Preservation Codes:
City: Edison	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: Lightolier	Project #: 48012644			
Site:	SSOW#:			

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)	4500_Cl_F/ Chlorine, Residual	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
STEEP BROOK (480-163218-1)	11/21/19	13:20 Eastern		Water			X	1	

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

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

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Cynthia Arnold	Date/Time: 11/25/19 1760	Company TA	Received by: Angela Pinilla via Fedex	Date/Time: 11/26/19 9:05	Company TAEdison
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.: 975321	Cooler Temperature(s) °C and Other Remarks: 3.6/3.9°C IR#1

Ver: 01/16/2019

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ANALYTICAL REPORT

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

Laboratory Job ID: 480-164472-1
Client Project/Site: Lightolier

For:
ARCADIS U.S., Inc.
1 Executive Drive
Suite 303
Chelmsford, Massachusetts 01824

Attn: Janet Connolly

Authorized for release by:
12/27/2019 1:29:39 PM

Becky Mason, Project Manager II
(413)572-4000
becky.mason@testamericainc.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Job ID: 480-164472-1
Project/Site: Lightolier

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

Job ID: 480-164472-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-164472-1

Receipt
The sample was received on 12/20/2019 7:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

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

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

Client Sample ID: STEEP BROOK

Lab Sample ID: 480-164472-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	48		4.0	1.1	mg/L	1		SM 2340C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

Client Sample ID: STEEP BROOK
Date Collected: 12/19/19 11:35
Date Received: 12/20/19 07:00

Lab Sample ID: 480-164472-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.010	0.0050	mg/L			12/20/19 10:25	1
Chromium, trivalent	ND		0.010	0.0060	mg/L			12/27/19 13:05	1
Hardness as calcium carbonate	**48**		4.0	1.1	mg/L			12/23/19 09:25	1

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-511112/3
Matrix: Water
Analysis Batch: 511112

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.010	0.0050	mg/L			12/20/19 10:25	1

Lab Sample ID: LCS 480-511112/4
Matrix: Water
Analysis Batch: 511112

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chromium, hexavalent			0.200	0.191		mg/L		96	85 - 115		

Lab Sample ID: LCSD 480-511112/5
Matrix: Water
Analysis Batch: 511112

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
Chromium, hexavalent			0.200	0.191		mg/L		96	85 - 115	0	20

Lab Sample ID: 480-164472-1 DU
Matrix: Water
Analysis Batch: 511112

Client Sample ID: STEEP BROOK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chromium, hexavalent	ND			ND		mg/L				NC	20

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-511475/3
Matrix: Water
Analysis Batch: 511475

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		2.0	0.53	mg/L			12/23/19 09:25	1

Lab Sample ID: LCS 480-511475/4
Matrix: Water
Analysis Batch: 511475

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hardness as calcium carbonate			272	276		mg/L		101	90 - 110		

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

General Chemistry

Analysis Batch: 511112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164472-1	STEEP BROOK	Total/NA	Water	7196A	
MB 480-511112/3	Method Blank	Total/NA	Water	7196A	
LCS 480-511112/4	Lab Control Sample	Total/NA	Water	7196A	
LCSD 480-511112/5	Lab Control Sample Dup	Total/NA	Water	7196A	
480-164472-1 DU	STEEP BROOK	Total/NA	Water	7196A	

Analysis Batch: 511475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164472-1	STEEP BROOK	Total/NA	Water	SM 2340C	
MB 480-511475/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-511475/4	Lab Control Sample	Total/NA	Water	SM 2340C	

Analysis Batch: 511997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164472-1	STEEP BROOK	Total/NA	Water	7196A	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 480-164472-1
Project/Site: Lightolier

Client Sample ID: STEEP BROOK
Lab Sample ID: 480-164472-1
Date Collected: 12/19/19 11:35
Matrix: Water
Date Received: 12/20/19 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1	511112	12/20/19 10:25	RLM	TAL BUF
Total/NA	Analysis	7196A		1	511997	12/27/19 13:05	JJP	TAL BUF
Total/NA	Analysis	SM 2340C		1	511475	12/23/19 09:25	JRF	TAL BUF

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Massachusetts	State Program	M-NY044	06-30-20

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
7196A		Water	Chromium, hexavalent
7196A		Water	Chromium, trivalent

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL BUF
7196A	Chromium, Trivalent (Colorimetric)	SW846	TAL BUF
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-164472-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-164472-1	STEEP BROOK	Water	12/19/19 11:35	12/20/19 07:00	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-164472-1

Login Number: 164472

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Wallace, Cameron

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

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

Chain of Custody Record

eurofins

Client Information			
Client Contact: Tom Duffy	Sampler: Desmond Bedard	Lab PM: Mason, Becky C	COC No.: 480-139725-31412.1
Company: ARCADIS U.S., Inc	Phone: 617-902-8503	E-Mail: becky.mason@testamericainc.com	Page: Page 1 of 1
Address: 631 Airport Rd	Due Date Requested:	Carrier Tracking No(s):	Job #:
City: Fall River	TAT Requested (days):		Preservation Codes: M - Hexane
State, Zip: MA, 02720			K - EDTA; L - EDA; Z - other (specify)
Phone: 617-908-7137	PO #: 30029624		Other:
Email: tom.w.duffy@arcadis.com	WO #: Task 08ANA		
Project Name: Lightolier	Project #: 48012644		
Site: Steep Brook	SSOW#:		

480-164472 Chain of Custody

Analysis Requested: Hex-chrome; Tri-chrome; Hardness

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix	Hex-chrome	Tri-chrome	Hardness	Total Number of containers	Special Instructions/Note
			Preservation Code:						
Steep Brook	12/19/19	11:35	G	Water	X	X	X	2	← 1 unpreserved; 1 Nitric Acid

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: Desmond Bedard	Date/Time: 12/19/19 12:00	Company: Arcadis	Received by: [signature]	Date/Time: 12/19/19 [illegible]	Company: [illegible]
Relinquished by: [signature]	Date/Time: 12/19/19 12:[illegible]	Company: [illegible]	Received by: C Wallace	Date/Time: 12/20/19 0700	Company: TAB
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: #1 [illegible]

Ver: 01/16/2019

Section C(1) – Influent Analytical Results

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 480-161531-1
Client Project/Site: Lightolier
Revision: 1

For:
ARCADIS U.S., Inc.
1 Executive Drive
Suite 303
Chelmsford, Massachusetts 01824

Attn: Janet Connolly

Authorized for release by:
1/13/2020 8:46:00 AM

Becky Mason, Project Manager II
(413)572-4000
becky.mason@testamericainc.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

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

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Job ID: 480-161531-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-161531-1

Revised report: Added Methylene chloride to 624.1 method.

Receipt
The samples were received on 10/25/2019 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2º C.

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 480-500607 recovered above the upper control limit for Tert-amyl methyl ether. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: MW-11 (480-161531-2).

Method 8260C: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-11 (480-161531-2). Elevated reporting limits (RLs) are provided.

Method 624.1: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-11 (480-161531-2). Elevated reporting limits (RLs) are provided.

Method 624.1: The continuing calibration verification (CCV) associated with batch 480-500891 recovered above the upper control limit for Carbon tetrachloride and Methyl tert-butyl ether. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: MW-11 (480-161531-2).

Method 624.1: The laboratory control sample (LCS) for analytical batch 480-500891 recovered outside control limits for the following analytes: Carbon tetrachloride and Methyl tert-butyl ether. These analytes were biased high in the LCS and were not detected in the associated samples; 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.

GC/MS Semi VOA
Method 8270D SIM: The continuing calibration verification (CCV) analyzed in batch 460-651561 was outside the method criteria for the following analyte(s): N-Nitrosodimethylamine, Indeno[1,2,3-cd]pyrene, Pentachlorophenol and Dibenz(a,h)anthracene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 8270D SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 460-651416 and analytical batch 460-651561 recovered outside control limits for the following analytes: Indeno[1,2,3-cd]pyrene and Benzo[b]fluoranthene.

Method 8270D SIM: Surrogates recoveries for the following laboratory control sample duplicate (LCSD) associated with batch 460-651416 were outside limits. All spike recoveries were within limits. Sample has been qualified and reported.

Method 625.1: The laboratory control sample (LCS) for preparation batch 480-500762 and analytical batch 480-500899 recovered outside control limits for the following analytes: Pyrene. This analyte was biased high in the LCS and was not detected in the associated samples; 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.

GC Semi VOA
Method 300.0: The following sample was diluted to bring the concentration of Chloride within the calibration range: MW-11 (480-161531-2). Elevated reporting limits (RLs) are provided.

Method 608.3: The continuing calibration verification (CCV) associated with batch 480-501296 recovered above the upper control limit for PCB-1232. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Job ID: 480-161531-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

The following sample is impacted: MW-11 (480-161531-2).

Method 608.3: Surrogate recovery for the following sample was outside control limits: MW-11 (480-161531-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 608.3: The following sample was diluted due to the nature of the sample matrix: MW-11 (480-161531-2). Elevated reporting limits (RLs) are provided.

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

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

General Chemistry
Method 1664A: Analysis for Hexane Extractable Material (HEM) was performed for the following sample: MW-11 (480-161531-2). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

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

Organic Prep
Method 625: Due to the matrix, the initial volume(s) used for the following sample deviated from the standard procedure: MW-11 (480-161531-2). The reporting limits (RLs) have been adjusted proportionately.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-500883.

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

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Client Sample ID: MW-11

Lab Sample ID: 480-161531-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.014	J	0.050	0.0040	mg/L	2		624.1	Total/NA
cis-1,2-Dichloroethene	130		10	1.1	ug/L	2		624.1	Total/NA
Vinyl chloride	26		10	1.5	ug/L	2		624.1	Total/NA
Diphenylnitrosamine	60		50	4.0	ug/L	1		625.1	Total/NA
Chloride	170000		7200	840	ug/L	60		300.0	Total/NA
Arsenic	0.42	J	1.0	0.15	ug/L	1		200.8	Total/NA
Iron	9000		100	38	ug/L	1		200.8	Total/NA
Zinc	8.4	J	20	8.1	ug/L	1		200.8	Total/NA
Ammonia	0.63		0.10	0.068	mg/L	1		350.1	Total/NA
Phenolics, Total Recoverable	0.0053		0.0050	0.0041	mg/L	1		420.4	Total/NA
Total Suspended Solids	13		5.0	5.0	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Client Sample ID: MW-11
Date Collected: 10/24/19 13:58
Date Received: 10/25/19 08:00

Lab Sample ID: 480-161531-2
Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		10	0.77	ug/L			10/29/19 16:35	2
1,1,2-Trichloroethane	ND		10	0.96	ug/L			10/29/19 16:35	2
1,1-Dichloroethane	ND		10	1.2	ug/L			10/29/19 16:35	2
1,1-Dichloroethene	ND		10	1.7	ug/L			10/29/19 16:35	2
1,2-Dichlorobenzene	ND		10	0.89	ug/L			10/29/19 16:35	2
Dichloroethane	ND		10	1.2	ug/L			10/29/19 16:35	2
1,3-Dichlorobenzene	ND		10	1.1	ug/L			10/29/19 16:35	2
1,4-Dichlorobenzene	ND		10	1.0	ug/L			10/29/19 16:35	2
Acetone	**0.014**	**J**	0.050	0.0040	mg/L			10/29/19 16:35	2
Benzene	ND		10	1.2	ug/L			10/29/19 16:35	2
Carbon tetrachloride	ND	*	10	1.0	ug/L			10/29/19 16:35	2
cis-1,2-Dichloroethene	**130**		10	1.1	ug/L			10/29/19 16:35	2
Ethylbenzene	ND		10	0.93	ug/L			10/29/19 16:35	2
m-Xylene & p-Xylene	ND		20	2.2	ug/L			10/29/19 16:35	2
Methylene Chloride	ND		10	1.6	ug/L			10/29/19 16:35	2
o-Xylene	ND		10	0.86	ug/L			10/29/19 16:35	2
Tetrachloroethene	ND		10	0.68	ug/L			10/29/19 16:35	2
Toluene	ND		10	0.91	ug/L			10/29/19 16:35	2
Trichloroethylene	ND		10	1.2	ug/L			10/29/19 16:35	2
Vinyl chloride	**26**		10	1.5	ug/L			10/29/19 16:35	2
tert-Butyl alcohol	ND		200	23	ug/L			10/29/19 16:35	2
Total BTEX	ND		20	2.2	ug/L			10/29/19 16:35	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*68 - 130*		*10/29/19 16:35*	*2*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*		*10/29/19 16:35*	*2*
Toluene-d8 (Surr)	*93*		*77 - 120*		*10/29/19 16:35*	*2*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.40	0.33	ug/L			10/31/19 08:10	1
Ethylene Dibromide	ND		0.020	0.0079	ug/L			10/31/19 08:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*72 - 133*		*10/31/19 08:10*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		4.0	0.64	ug/L			10/28/19 15:45	4
Tert-amyl methyl ether	ND		4.0	1.1	ug/L			10/28/19 15:45	4
Ethanol	ND		200	140	ug/L			10/28/19 15:45	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/28/19 15:45*	*4*
1,2-Dichloroethane-d4 (Surr)	*115*		*77 - 120*		*10/28/19 15:45*	*4*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*10/28/19 15:45*	*4*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*10/28/19 15:45*	*4*

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		50	14	ug/L		10/28/19 15:24	10/29/19 19:30	1

Client Sample ID: MW-11
Date Collected: 10/24/19 13:58
Date Received: 10/25/19 08:00

Lab Sample ID: 480-161531-2
Matrix: Water

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		50	10	ug/L		10/28/19 15:24	10/29/19 19:30	1
2,4-Dichlorophenol	ND		50	7.7	ug/L		10/28/19 15:24	10/29/19 19:30	1
2,4-Dimethylphenol	ND		50	14	ug/L		10/28/19 15:24	10/29/19 19:30	1
2,4-Dinitrophenol	ND		100	50	ug/L		10/28/19 15:24	10/29/19 19:30	1
2-Chlorophenol	ND		50	6.6	ug/L		10/28/19 15:24	10/29/19 19:30	1
2-Methylphenol	ND		50	8.1	ug/L		10/28/19 15:24	10/29/19 19:30	1
2-Nitrophenol	ND		50	7.0	ug/L		10/28/19 15:24	10/29/19 19:30	1
3 & 4 Methylphenol	ND		100	8.3	ug/L		10/28/19 15:24	10/29/19 19:30	1
3-Methylphenol	ND		100	8.3	ug/L		10/28/19 15:24	10/29/19 19:30	1
4,6-Dinitro-2-methylphenol	ND		100	6.6	ug/L		10/28/19 15:24	10/29/19 19:30	1
4-Chloro-3-methylphenol	ND		50	11	ug/L		10/28/19 15:24	10/29/19 19:30	1
4-Methylphenol	ND		50	7.9	ug/L		10/28/19 15:24	10/29/19 19:30	1
4-Nitrophenol	ND		150	100	ug/L		10/28/19 15:24	10/29/19 19:30	1
Acenaphthene	ND		50	8.1	ug/L		10/28/19 15:24	10/29/19 19:30	1
Acenaphthylene	ND		50	8.7	ug/L		10/28/19 15:24	10/29/19 19:30	1
Anthracene	ND		50	14	ug/L		10/28/19 15:24	10/29/19 19:30	1
Benzo(a)anthracene	ND		50	11	ug/L		10/28/19 15:24	10/29/19 19:30	1
Benzo(a)pyrene	ND		50	13	ug/L		10/28/19 15:24	10/29/19 19:30	1
Benzo(b)fluoranthene	ND		50	12	ug/L		10/28/19 15:24	10/29/19 19:30	1
Benzo(g,h,i) perylene	ND		50	15	ug/L		10/28/19 15:24	10/29/19 19:30	1
Benzo(k)fluoranthene	ND		50	13	ug/L		10/28/19 15:24	10/29/19 19:30	1
Di (2-ethylhexyl)phthalate	ND		100	12	ug/L		10/28/19 15:24	10/29/19 19:30	1
Butyl benzyl phthalate	ND		50	11	ug/L		10/28/19 15:24	10/29/19 19:30	1
Chrysene	ND		50	10	ug/L		10/28/19 15:24	10/29/19 19:30	1
Di-n-butyl phthalate	ND		50	16	ug/L		10/28/19 15:24	10/29/19 19:30	1
Di-n-octyl phthalate	ND		50	12	ug/L		10/28/19 15:24	10/29/19 19:30	1
Dibenz(a,h)anthracene	ND		50	15	ug/L		10/28/19 15:24	10/29/19 19:30	1
Diethyl phthalate	ND		50	10	ug/L		10/28/19 15:24	10/29/19 19:30	1
Dimethyl phthalate	ND		50	9.1	ug/L		10/28/19 15:24	10/29/19 19:30	1
Fluoranthene	ND		50	16	ug/L		10/28/19 15:24	10/29/19 19:30	1
Fluorene	ND		50	10	ug/L		10/28/19 15:24	10/29/19 19:30	1
Indeno(1,2,3-cd)pyrene	ND		50	15	ug/L		10/28/19 15:24	10/29/19 19:30	1
N-Nitrosodi-n-propylamine	ND		50	8.9	ug/L		10/28/19 15:24	10/29/19 19:30	1
Dimethylnitrosamine	ND		100	50	ug/L		10/28/19 15:24	10/29/19 19:30	1
Diphenylnitrosamine	**60**		50	4.0	ug/L		10/28/19 15:24	10/29/19 19:30	1
Naphthalene	ND		50	8.6	ug/L		10/28/19 15:24	10/29/19 19:30	1
Pentachlorophenol	ND		100	16	ug/L		10/28/19 15:24	10/29/19 19:30	1
Phenanthrene	ND		50	12	ug/L		10/28/19 15:24	10/29/19 19:30	1
Phenol	ND		50	3.5	ug/L		10/28/19 15:24	10/29/19 19:30	1
Pyrene	ND	*	50	14	ug/L		10/28/19 15:24	10/29/19 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*100*		*52 - 151*	*10/28/19 15:24*	*10/29/19 19:30*	*1*
2-Fluorobiphenyl	*99*		*44 - 120*	*10/28/19 15:24*	*10/29/19 19:30*	*1*
2-Fluorophenol (Surr)	*46*		*17 - 120*	*10/28/19 15:24*	*10/29/19 19:30*	*1*
Nitrobenzene-d5 (Surr)	*97*		*15 - 314*	*10/28/19 15:24*	*10/29/19 19:30*	*1*
p-Terphenyl-d14	*115*		*22 - 125*	*10/28/19 15:24*	*10/29/19 19:30*	*1*
Phenol-d5 (Surr)	*32*		*8 - 424*	*10/28/19 15:24*	*10/29/19 19:30*	*1*

Client Sample ID: MW-11

Date Collected: 10/24/19 13:58
Date Received: 10/25/19 08:00

Lab Sample ID: 480-161531-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.016	ug/L		10/30/19 09:46	10/31/19 02:46	1
Benzo[a]pyrene	ND		0.050	0.022	ug/L		10/30/19 09:46	10/31/19 02:46	1
Benzo[b]fluoranthene	ND	*	0.050	0.024	ug/L		10/30/19 09:46	10/31/19 02:46	1
Benzo[k]fluoranthene	ND		0.050	0.028	ug/L		10/30/19 09:46	10/31/19 02:46	1
Bis(2-chloroethyl)ether	ND		0.030	0.026	ug/L		10/30/19 09:46	10/31/19 02:46	1
Chrysene	ND		0.050	0.030	ug/L		10/30/19 09:46	10/31/19 02:46	1
Dibenz(a,h)anthracene	ND		0.050	0.011	ug/L		10/30/19 09:46	10/31/19 02:46	1
Hexachlorobenzene	ND		0.020	0.013	ug/L		10/30/19 09:46	10/31/19 02:46	1
Indeno[1,2,3-cd]pyrene	ND	*	0.050	0.036	ug/L		10/30/19 09:46	10/31/19 02:46	1
N-Nitrosodimethylamine	ND		0.20	0.12	ug/L		10/30/19 09:46	10/31/19 02:46	1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.57	0.36	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1221	ND		0.57	0.36	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1232	ND		0.57	0.36	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1242	ND		0.57	0.36	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1248	ND		0.57	0.36	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1254	ND		0.57	0.30	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1260	ND		0.57	0.30	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1262	ND		0.57	0.30	ug/L		10/29/19 08:22	10/30/19 21:46	10
PCB-1268	ND		0.57	0.30	ug/L		10/29/19 08:22	10/30/19 21:46	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*87*		*36 - 121*	*10/29/19 08:22*	*10/30/19 21:46*	*10*
Tetrachloro-m-xylene (Surr)	*170*	*X*	*42 - 135*	*10/29/19 08:22*	*10/30/19 21:46*	*10*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**170000**		7200	840	ug/L			10/31/19 10:47	60

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		3.0	1.3	ug/L		10/30/19 08:44	10/31/19 14:53	1
Arsenic	**0.42**	**J**	1.0	0.15	ug/L		10/30/19 08:44	10/31/19 14:53	1
Cadmium	ND		0.50	0.15	ug/L		10/30/19 08:44	10/31/19 14:53	1
Copper	ND		2.0	0.63	ug/L		10/30/19 08:44	10/31/19 14:53	1
Lead	ND		0.50	0.16	ug/L		10/30/19 08:44	10/31/19 14:53	1
Iron	**9000**		100	38	ug/L		10/30/19 08:44	10/31/19 14:53	1
Nickel	ND		2.0	0.92	ug/L		10/30/19 08:44	10/31/19 14:53	1
Selenium	ND		2.5	1.1	ug/L		10/30/19 08:44	10/31/19 14:53	1
Silver	ND		0.50	0.078	ug/L		10/30/19 08:44	10/31/19 14:53	1
Zinc	**8.4**	**J**	20	8.1	ug/L		10/30/19 08:44	10/31/19 14:53	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.091	ug/L		10/28/19 11:05	10/29/19 08:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Client Sample ID: MW-11
Date Collected: 10/24/19 13:58
Date Received: 10/25/19 08:00

Lab Sample ID: 480-161531-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (1664A)	ND		5.0	1.4	mg/L			10/30/19 11:53	1
Chromium, hexavalent	ND		0.30	0.23	ug/L			11/01/19 15:22	1
Cr (III)	ND		5.0	2.0	ug/L			10/30/19 09:32	1
Ammonia	**0.63**		0.10	0.068	mg/L			10/30/19 16:20	1
Phenolics, Total Recoverable	**0.0053**		0.0050	0.0041	mg/L		11/04/19 09:10	11/04/19 12:08	1
Chlorine, Total Residual	ND	HF	400	140	ug/L			10/31/19 15:55	1
Cyanide, Total	ND		0.010	0.0030	mg/L		11/04/19 10:25	11/04/19 15:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**13**		5.0	5.0	mg/L			10/31/19 09:09	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	BFB	TOL
Lab Sample ID	Client Sample ID	(68-130)	(76-123)	(77-120)
480-161531-2	MW-11	115	99	93
LCS 480-500891/5	Lab Control Sample	116	101	95
MB 480-500891/7	Method Blank	117	98	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DCA	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(77-120)	(73-120)	(75-123)
480-161531-2	MW-11	100	115	102	113
LCS 480-500607/5	Lab Control Sample	102	112	100	109
MB 480-500607/7	Method Blank	102	114	100	113

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(72-133)
480-161531-2	MW-11	91
LCS 460-651593/3	Lab Control Sample	100
LCSD 460-651593/5	Lab Control Sample Dup	102
MB 460-651593/9	Method Blank	97

Surrogate Legend

BFB = 4-Bromofluorobenzene

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	TPHd14	PHL
Lab Sample ID	Client Sample ID	(52-151)	(44-120)	(17-120)	(15-314)	(22-125)	(8-424)
480-161531-2	MW-11	100	99	46	97	115	32
LCS 480-500762/2-A	Lab Control Sample	93	102	53	101	114	38
MB 480-500762/1-A	Method Blank	78	98	53	100	104	38

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14
PHL = Phenol-d5 (Surr)

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCBP1 (36-121)	TCX1 (42-135)
480-161531-2	MW-11	87	170 X
LCS 480-500883/2-A	Lab Control Sample	59	92
LCSD 480-500883/3-A	Lab Control Sample Dup	63	92
MB 480-500883/1-A	Method Blank	71	97

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-500891/7
Matrix: Water
Analysis Batch: 500891

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			10/29/19 12:16	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			10/29/19 12:16	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			10/29/19 12:16	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			10/29/19 12:16	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			10/29/19 12:16	1
Dichloroethane	ND		5.0	0.60	ug/L			10/29/19 12:16	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			10/29/19 12:16	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			10/29/19 12:16	1
Acetone	ND		0.025	0.0020	mg/L			10/29/19 12:16	1
Benzene	ND		5.0	0.60	ug/L			10/29/19 12:16	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			10/29/19 12:16	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			10/29/19 12:16	1
Ethylbenzene	ND		5.0	0.46	ug/L			10/29/19 12:16	1
m-Xylene & p-Xylene	ND		10	1.1	ug/L			10/29/19 12:16	1
Methylene Chloride	ND		5.0	0.81	ug/L			10/29/19 12:16	1
o-Xylene	ND		5.0	0.43	ug/L			10/29/19 12:16	1
Tetrachloroethene	ND		5.0	0.34	ug/L			10/29/19 12:16	1
Toluene	ND		5.0	0.45	ug/L			10/29/19 12:16	1
Trichloroethylene	ND		5.0	0.60	ug/L			10/29/19 12:16	1
Vinyl chloride	ND		5.0	0.75	ug/L			10/29/19 12:16	1
tert-Butyl alcohol	ND		100	12	ug/L			10/29/19 12:16	1
Total BTEX	ND		10	1.1	ug/L			10/29/19 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*68 - 130*		*10/29/19 12:16*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 123*		*10/29/19 12:16*	*1*
Toluene-d8 (Surr)	*94*		*77 - 120*		*10/29/19 12:16*	*1*

Lab Sample ID: LCS 480-500891/5
Matrix: Water
Analysis Batch: 500891

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	26.7		ug/L		133	52 - 162
1,1,2-Trichloroethane	20.0	19.5		ug/L		97	52 - 150
1,1-Dichloroethane	20.0	25.1		ug/L		125	59 - 155
1,1-Dichloroethene	20.0	24.9		ug/L		124	1 - 234
1,2-Dichlorobenzene	20.0	18.6		ug/L		93	18 - 190
Dichloroethane	20.0	23.8		ug/L		119	49 - 155
1,3-Dichlorobenzene	20.0	19.2		ug/L		96	59 - 156
1,4-Dichlorobenzene	20.0	19.3		ug/L		96	18 - 190
Acetone	0.100	0.135		mg/L		135	21 - 161
Benzene	20.0	24.9		ug/L		125	37 - 151
Carbon tetrachloride	20.0	28.4	*	ug/L		142	70 - 140
cis-1,2-Dichloroethene	20.0	25.1		ug/L		125	50 - 150
Ethylbenzene	20.0	20.8		ug/L		104	37 - 162
m-Xylene & p-Xylene	20.0	20.5		ug/L		102	79 - 120
Methylene Chloride	20.0	26.8		ug/L		134	1 - 221

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-500891/5
Matrix: Water
Analysis Batch: 500891

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
o-Xylene	20.0	20.7		ug/L		104	79 - 120
Tetrachloroethene	20.0	21.3		ug/L		106	64 - 148
Toluene	20.0	20.4		ug/L		102	47 - 150
Trichloroethylene	20.0	24.8		ug/L		124	71 - 157
Vinyl chloride	20.0	28.3		ug/L		142	1 - 251

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*116*		*68 - 130*
4-Bromofluorobenzene (Surr)	*101*		*76 - 123*
Toluene-d8 (Surr)	*95*		*77 - 120*

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

Lab Sample ID: MB 480-500607/7
Matrix: Water
Analysis Batch: 500607

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/28/19 10:54	1
Tert-amyl methyl ether	ND		1.0	0.27	ug/L			10/28/19 10:54	1
Ethanol	ND		50	34	ug/L			10/28/19 10:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/28/19 10:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*77 - 120*		*10/28/19 10:54*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*10/28/19 10:54*	*1*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*10/28/19 10:54*	*1*

Lab Sample ID: LCS 480-500607/5
Matrix: Water
Analysis Batch: 500607

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	25.0	28.7		ug/L		115	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*112*		*77 - 120*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*
Dibromofluoromethane (Surr)	*109*		*75 - 123*

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

Lab Sample ID: MB 460-651593/9
Matrix: Water
Analysis Batch: 651593

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.40	0.33	ug/L			10/31/19 01:50	1
Ethylene Dibromide	ND		0.020	0.0079	ug/L			10/31/19 01:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 133*		*10/31/19 01:50*	*1*

Lab Sample ID: LCS 460-651593/3
Matrix: Water
Analysis Batch: 651593

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			5.00	4.79		ug/L		96	66 - 135		
Ethylene Dibromide			0.0500	0.0381		ug/L		76	59 - 132		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*72 - 133*

Lab Sample ID: LCSD 460-651593/5
Matrix: Water
Analysis Batch: 651593

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
1,4-Dioxane			5.00	5.29		ug/L		106	66 - 135	10	30
Ethylene Dibromide			0.0500	0.0454		ug/L		91	59 - 132	18	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*72 - 133*

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-500762/1-A
Matrix: Water
Analysis Batch: 500899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		5.0	1.4	ug/L		10/28/19 15:24	10/29/19 18:42	1
2,4,6-Trichlorophenol	ND		5.0	1.0	ug/L		10/28/19 15:24	10/29/19 18:42	1
2,4-Dichlorophenol	ND		5.0	0.77	ug/L		10/28/19 15:24	10/29/19 18:42	1
2,4-Dimethylphenol	ND		5.0	1.4	ug/L		10/28/19 15:24	10/29/19 18:42	1
2,4-Dinitrophenol	ND		10	5.0	ug/L		10/28/19 15:24	10/29/19 18:42	1
2-Chlorophenol	ND		5.0	0.66	ug/L		10/28/19 15:24	10/29/19 18:42	1
2-Methylphenol	ND		5.0	0.81	ug/L		10/28/19 15:24	10/29/19 18:42	1
2-Nitrophenol	ND		5.0	0.70	ug/L		10/28/19 15:24	10/29/19 18:42	1
3 & 4 Methylphenol	ND		10	0.83	ug/L		10/28/19 15:24	10/29/19 18:42	1
3-Methylphenol	ND		10	0.83	ug/L		10/28/19 15:24	10/29/19 18:42	1
4,6-Dinitro-2-methylphenol	ND		10	0.66	ug/L		10/28/19 15:24	10/29/19 18:42	1
4-Chloro-3-methylphenol	ND		5.0	1.1	ug/L		10/28/19 15:24	10/29/19 18:42	1
4-Methylphenol	ND		5.0	0.79	ug/L		10/28/19 15:24	10/29/19 18:42	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-500762/1-A
Matrix: Water
Analysis Batch: 500899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		15	10	ug/L		10/28/19 15:24	10/29/19 18:42	1
Acenaphthene	ND		5.0	0.81	ug/L		10/28/19 15:24	10/29/19 18:42	1
Acenaphthylene	ND		5.0	0.87	ug/L		10/28/19 15:24	10/29/19 18:42	1
Anthracene	ND		5.0	1.4	ug/L		10/28/19 15:24	10/29/19 18:42	1
Benzo(a)anthracene	ND		5.0	1.1	ug/L		10/28/19 15:24	10/29/19 18:42	1
Benzo(a)pyrene	ND		5.0	1.3	ug/L		10/28/19 15:24	10/29/19 18:42	1
Benzo(b)fluoranthene	ND		5.0	1.2	ug/L		10/28/19 15:24	10/29/19 18:42	1
Benzo(g,h,i) perylene	ND		5.0	1.5	ug/L		10/28/19 15:24	10/29/19 18:42	1
Benzo(k)fluoranthene	ND		5.0	1.3	ug/L		10/28/19 15:24	10/29/19 18:42	1
Di (2-ethylhexyl)phthalate	ND		10	1.2	ug/L		10/28/19 15:24	10/29/19 18:42	1
Butyl benzyl phthalate	ND		5.0	1.1	ug/L		10/28/19 15:24	10/29/19 18:42	1
Chrysene	ND		5.0	1.0	ug/L		10/28/19 15:24	10/29/19 18:42	1
Di-n-butyl phthalate	ND		5.0	1.6	ug/L		10/28/19 15:24	10/29/19 18:42	1
Di-n-octyl phthalate	ND		5.0	1.2	ug/L		10/28/19 15:24	10/29/19 18:42	1
Dibenz(a,h)anthracene	ND		5.0	1.5	ug/L		10/28/19 15:24	10/29/19 18:42	1
Diethyl phthalate	ND		5.0	1.0	ug/L		10/28/19 15:24	10/29/19 18:42	1
Dimethyl phthalate	ND		5.0	0.91	ug/L		10/28/19 15:24	10/29/19 18:42	1
Fluoranthene	ND		5.0	1.6	ug/L		10/28/19 15:24	10/29/19 18:42	1
Fluorene	ND		5.0	1.0	ug/L		10/28/19 15:24	10/29/19 18:42	1
Indeno(1,2,3-cd)pyrene	ND		5.0	1.5	ug/L		10/28/19 15:24	10/29/19 18:42	1
N-Nitrosodi-n-propylamine	ND		5.0	0.89	ug/L		10/28/19 15:24	10/29/19 18:42	1
Dimethylnitrosamine	ND		10	5.0	ug/L		10/28/19 15:24	10/29/19 18:42	1
Diphenylnitrosamine	ND		5.0	0.40	ug/L		10/28/19 15:24	10/29/19 18:42	1
Naphthalene	ND		5.0	0.86	ug/L		10/28/19 15:24	10/29/19 18:42	1
Pentachlorophenol	ND		10	1.6	ug/L		10/28/19 15:24	10/29/19 18:42	1
Phenanthrene	ND		5.0	1.2	ug/L		10/28/19 15:24	10/29/19 18:42	1
Phenol	ND		5.0	0.35	ug/L		10/28/19 15:24	10/29/19 18:42	1
Pyrene	ND		5.0	1.4	ug/L		10/28/19 15:24	10/29/19 18:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*78*		*52 - 151*	*10/28/19 15:24*	*10/29/19 18:42*	*1*
2-Fluorobiphenyl	*98*		*44 - 120*	*10/28/19 15:24*	*10/29/19 18:42*	*1*
2-Fluorophenol (Surr)	*53*		*17 - 120*	*10/28/19 15:24*	*10/29/19 18:42*	*1*
Nitrobenzene-d5 (Surr)	*100*		*15 - 314*	*10/28/19 15:24*	*10/29/19 18:42*	*1*
p-Terphenyl-d14	*104*		*22 - 125*	*10/28/19 15:24*	*10/29/19 18:42*	*1*
Phenol-d5 (Surr)	*38*		*8 - 424*	*10/28/19 15:24*	*10/29/19 18:42*	*1*

Lab Sample ID: LCS 480-500762/2-A
Matrix: Water
Analysis Batch: 500899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500762

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dichlorophenol	50.0	47.1		ug/L		94	39 - 135
2,4-Dimethylphenol	50.0	47.5		ug/L		95	32 - 120
2-Methylphenol	50.0	38.3		ug/L		77	45 - 120
3 & 4 Methylphenol	50.0	35.5		ug/L		71	48 - 120
3-Methylphenol	50.0	35.5		ug/L		71	48 - 120
4-Methylphenol	50.0	35.5		ug/L		71	48 - 120

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-500762/2-A
Matrix: Water
Analysis Batch: 500899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500762

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	50.0	50.5		ug/L		101	47 - 145
Acenaphthylene	50.0	49.7		ug/L		99	33 - 145
Anthracene	50.0	54.3		ug/L		109	27 - 133
Benzo(a)anthracene	50.0	57.0		ug/L		114	33 - 143
Benzo(a)pyrene	50.0	50.6		ug/L		101	17 - 163
Benzo(b)fluoranthene	50.0	54.4		ug/L		109	24 - 159
Benzo(g,h,i) perylene	50.0	53.7		ug/L		107	1 - 219
Benzo(k)fluoranthene	50.0	48.1		ug/L		96	11 - 162
Di (2-ethylhexyl)phthalate	50.0	60.1		ug/L		120	8 - 158
Butyl benzyl phthalate	50.0	60.7		ug/L		121	1 - 152
Chrysene	50.0	57.6		ug/L		115	17 - 168
Di-n-butyl phthalate	50.0	57.6		ug/L		115	1 - 120
Di-n-octyl phthalate	50.0	63.8		ug/L		128	4 - 146
Dibenz(a,h)anthracene	50.0	54.8		ug/L		110	1 - 227
Diethyl phthalate	50.0	51.3		ug/L		103	1 - 120
Dimethyl phthalate	50.0	50.4		ug/L		101	1 - 120
Fluoranthene	50.0	52.7		ug/L		105	26 - 137
Fluorene	50.0	48.5		ug/L		97	59 - 121
Indeno(1,2,3-cd)pyrene	50.0	53.7		ug/L		107	1 - 171
N-Nitrosodi-n-propylamine	50.0	45.6		ug/L		91	1 - 230
Dimethylnitrosamine	50.0	33.8		ug/L		68	19 - 120
Diphenylnitrosamine	50.0	54.5		ug/L		109	54 - 125
Naphthalene	50.0	46.4		ug/L		93	21 - 133
Pentachlorophenol	100	86.7		ug/L		87	14 - 176
Phenanthrene	50.0	54.2		ug/L		108	54 - 120
Phenol	50.0	19.3		ug/L		39	5 - 120
Pyrene	50.0	60.6	*	ug/L		121	52 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*93*		*52 - 151*
2-Fluorobiphenyl	*102*		*44 - 120*
2-Fluorophenol (Surr)	*53*		*17 - 120*
Nitrobenzene-d5 (Surr)	*101*		*15 - 314*
p-Terphenyl-d14	*114*		*22 - 125*
Phenol-d5 (Surr)	*38*		*8 - 424*

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

Lab Sample ID: MB 460-651416/1-A
Matrix: Water
Analysis Batch: 651561

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.016	ug/L		10/30/19 09:46	10/30/19 22:53	1
Benzo[a]pyrene	ND		0.050	0.022	ug/L		10/30/19 09:46	10/30/19 22:53	1
Benzo[b]fluoranthene	ND		0.050	0.024	ug/L		10/30/19 09:46	10/30/19 22:53	1
Benzo[k]fluoranthene	ND		0.050	0.028	ug/L		10/30/19 09:46	10/30/19 22:53	1
Bis(2-chloroethyl)ether	ND		0.030	0.026	ug/L		10/30/19 09:46	10/30/19 22:53	1
Chrysene	ND		0.050	0.030	ug/L		10/30/19 09:46	10/30/19 22:53	1

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

Lab Sample ID: MB 460-651416/1-A
Matrix: Water
Analysis Batch: 651561

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.050	0.011	ug/L		10/30/19 09:46	10/30/19 22:53	1
Hexachlorobenzene	ND		0.020	0.013	ug/L		10/30/19 09:46	10/30/19 22:53	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.036	ug/L		10/30/19 09:46	10/30/19 22:53	1
N-Nitrosodimethylamine	ND		0.20	0.12	ug/L		10/30/19 09:46	10/30/19 22:53	1

Lab Sample ID: LCS 460-651416/2-A
Matrix: Water
Analysis Batch: 651561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	0.800	0.763		ug/L		95	49 - 135
Benzo[a]pyrene	0.800	0.638		ug/L		80	40 - 141
Benzo[b]fluoranthene	0.800	0.608		ug/L		76	46 - 143
Bis(2-chloroethyl)ether	0.800	0.764		ug/L		95	33 - 150
Hexachlorobenzene	0.800	0.659		ug/L		82	29 - 132
N-Nitrosodimethylamine	0.800	0.289		ug/L		36	10 - 97

Lab Sample ID: LCSD 460-651416/3-A
Matrix: Water
Analysis Batch: 651561

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	0.800	0.904		ug/L		113	49 - 135	17	30
Benzo[a]pyrene	0.800	0.789		ug/L		99	40 - 141	21	30
Benzo[b]fluoranthene	0.800	0.829	*	ug/L		104	46 - 143	31	30
Bis(2-chloroethyl)ether	0.800	0.887		ug/L		111	33 - 150	15	30
Hexachlorobenzene	0.800	0.879		ug/L		110	29 - 132	29	30
N-Nitrosodimethylamine	0.800	0.306		ug/L		38	10 - 97	6	30

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 480-500883/1-A
Matrix: Water
Analysis Batch: 501296

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.060	0.038	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1221	ND		0.060	0.038	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1232	ND		0.060	0.038	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1242	ND		0.060	0.038	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1248	ND		0.060	0.038	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1254	ND		0.060	0.031	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1260	ND		0.060	0.031	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1262	ND		0.060	0.031	ug/L		10/29/19 08:22	10/30/19 18:27	1
PCB-1268	ND		0.060	0.031	ug/L		10/29/19 08:22	10/30/19 18:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*71*		*36 - 121*	*10/29/19 08:22*	*10/30/19 18:27*	*1*
Tetrachloro-m-xylene (Surr)	*97*		*42 - 135*	*10/29/19 08:22*	*10/30/19 18:27*	*1*

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCS 480-500883/2-A
Matrix: Water
Analysis Batch: 501296

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500883

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			1.00	1.03		ug/L		103	69 - 123		
PCB-1260			1.00	1.01		ug/L		101	69 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*59*		*36 - 121*
Tetrachloro-m-xylene (Surr)	*92*		*42 - 135*

Lab Sample ID: LCSD 480-500883/3-A
Matrix: Water
Analysis Batch: 501296

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 500883

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			1.00	1.07		ug/L		107	69 - 123	4	30
PCB-1260			1.00	1.08		ug/L		108	69 - 120	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*63*		*36 - 121*
Tetrachloro-m-xylene (Surr)	*92*		*42 - 135*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 460-651804/3
Matrix: Water
Analysis Batch: 651804

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		120	14	ug/L			10/31/19 03:03	1

Lab Sample ID: LCS 460-651804/5
Matrix: Water
Analysis Batch: 651804

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			1500	1540		ug/L		103	90 - 110		

Lab Sample ID: LCSD 460-651804/6
Matrix: Water
Analysis Batch: 651804

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
Chloride			1500	1570		ug/L		104	90 - 110	1	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 500-512642/1-A
Matrix: Water
Analysis Batch: 513090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 512642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		3.0	1.3	ug/L		10/30/19 08:44	10/31/19 14:45	1
Arsenic	ND		1.0	0.15	ug/L		10/30/19 08:44	10/31/19 14:45	1
Cadmium	ND		0.50	0.15	ug/L		10/30/19 08:44	10/31/19 14:45	1
Copper	ND		2.0	0.63	ug/L		10/30/19 08:44	10/31/19 14:45	1
Lead	ND		0.50	0.16	ug/L		10/30/19 08:44	10/31/19 14:45	1
Iron	ND		100	38	ug/L		10/30/19 08:44	10/31/19 14:45	1
Nickel	ND		2.0	0.92	ug/L		10/30/19 08:44	10/31/19 14:45	1
Selenium	ND		2.5	1.1	ug/L		10/30/19 08:44	10/31/19 14:45	1
Silver	ND		0.50	0.078	ug/L		10/30/19 08:44	10/31/19 14:45	1
Zinc	ND		20	8.1	ug/L		10/30/19 08:44	10/31/19 14:45	1

Lab Sample ID: LCS 500-512642/2-A
Matrix: Water
Analysis Batch: 513090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 512642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	500	532		ug/L		106	85 - 115
Arsenic	100	110		ug/L		110	85 - 115
Cadmium	50.0	49.6		ug/L		99	85 - 115
Copper	250	259		ug/L		104	85 - 115
Lead	100	101		ug/L		101	85 - 115
Iron	1000	1060		ug/L		106	85 - 115
Nickel	500	511		ug/L		102	85 - 115
Selenium	100	114		ug/L		114	85 - 115
Silver	50.0	49.8		ug/L		100	85 - 115
Zinc	500	554		ug/L		111	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 500-512243/12-A
Matrix: Water
Analysis Batch: 512472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 512243

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.091	ug/L		10/28/19 11:05	10/29/19 07:50	1

Lab Sample ID: LCS 500-512243/13-A
Matrix: Water
Analysis Batch: 512472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 512243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	2.09		ug/L		104	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 460-651420/1
Matrix: Water
Analysis Batch: 651420

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (1664A)	ND		5.0	1.4	mg/L			10/30/19 09:56	1

Lab Sample ID: LCS 460-651420/2
Matrix: Water
Analysis Batch: 651420

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Petroleum Hydrocarbons (1664A)	20.0	16.10		mg/L		80	64 - 132

Lab Sample ID: LCSD 460-651420/3
Matrix: Water
Analysis Batch: 651420

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
Total Petroleum Hydrocarbons (1664A)	20.0	14.80		mg/L		74	64 - 132	8	34

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 500-511186/3
Matrix: Water
Analysis Batch: 511186

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.30	0.23	ug/L			11/01/19 11:42	1

Lab Sample ID: LCS 500-511186/4
Matrix: Water
Analysis Batch: 511186

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	25.0	24.6		ug/L		98	90 - 110

Method: 420.4 - Phenolics, Total Recoverable

Lab Sample ID: MB 500-513387/1-A
Matrix: Water
Analysis Batch: 513456

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 513387

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenolics, Total Recoverable	ND		0.0050	0.0041	mg/L		11/04/19 09:10	11/04/19 12:03	1

Lab Sample ID: LCS 500-513387/2-A
Matrix: Water
Analysis Batch: 513456

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 513387

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenolics, Total Recoverable	0.100	0.0965		mg/L		97	90 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 460-651700/1
Matrix: Water
Analysis Batch: 651700

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		2.5	2.5	mg/L			10/31/19 09:09	1

Lab Sample ID: LCSSRM 460-651700/2
Matrix: Water
Analysis Batch: 651700

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

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	82.3	82.0		mg/L		99.6	81.8 - 111.2

Method: SM 4500 Cl F - Chlorine, Residual

Lab Sample ID: MB 460-651819/1
Matrix: Water
Analysis Batch: 651819

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorine, Total Residual	ND		400	140	ug/L			10/31/19 15:30	1

Lab Sample ID: LCSSRM 460-651819/2
Matrix: Water
Analysis Batch: 651819

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

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorine, Total Residual	1220	1230		ug/L		100.8	82.8 - 113.1

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-513413/1-A
Matrix: Water
Analysis Batch: 513887

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 513413

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010	0.0030	mg/L		11/04/19 10:25	11/04/19 15:32	1

Lab Sample ID: HLCS 500-513413/2-A
Matrix: Water
Analysis Batch: 513887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 513413

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.400	0.366		mg/L		91	90 - 110

Lab Sample ID: LCS 500-513413/3-A
Matrix: Water
Analysis Batch: 513887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 513413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0964		mg/L		96	85 - 115

Method: SM 4500 CN E - Cyanide, Total (Continued)

Lab Sample ID: LLCS 500-513413/4-A
Matrix: Water
Analysis Batch: 513887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 513413

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0400	0.0339		mg/L		85	75 - 125

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

GC/MS VOA

Analysis Batch: 500607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	8260C	
MB 480-500607/7	Method Blank	Total/NA	Water	8260C	
LCS 480-500607/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 500891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	624.1	
MB 480-500891/7	Method Blank	Total/NA	Water	624.1	
LCS 480-500891/5	Lab Control Sample	Total/NA	Water	624.1	

Analysis Batch: 651593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	8260C SIM	
MB 460-651593/9	Method Blank	Total/NA	Water	8260C SIM	
LCS 460-651593/3	Lab Control Sample	Total/NA	Water	8260C SIM	
LCSD 460-651593/5	Lab Control Sample Dup	Total/NA	Water	8260C SIM	

GC/MS Semi VOA

Prep Batch: 500762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	625	
MB 480-500762/1-A	Method Blank	Total/NA	Water	625	
LCS 480-500762/2-A	Lab Control Sample	Total/NA	Water	625	

Analysis Batch: 500899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	625.1	500762
MB 480-500762/1-A	Method Blank	Total/NA	Water	625.1	500762
LCS 480-500762/2-A	Lab Control Sample	Total/NA	Water	625.1	500762

Prep Batch: 651416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	3510C	
MB 460-651416/1-A	Method Blank	Total/NA	Water	3510C	
LCS 460-651416/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 460-651416/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 651561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	8270D SIM	651416
MB 460-651416/1-A	Method Blank	Total/NA	Water	8270D SIM	651416
LCS 460-651416/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	651416
LCSD 460-651416/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	651416

GC Semi VOA

Prep Batch: 500883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	3510C	
MB 480-500883/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-500883/2-A	Lab Control Sample	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 500883 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 480-500883/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 501296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	608.3	500883
MB 480-500883/1-A	Method Blank	Total/NA	Water	608.3	500883
LCS 480-500883/2-A	Lab Control Sample	Total/NA	Water	608.3	500883
LCSD 480-500883/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	500883

HPLC/IC

Analysis Batch: 651804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	300.0	
MB 460-651804/3	Method Blank	Total/NA	Water	300.0	
LCS 460-651804/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 460-651804/6	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Prep Batch: 512243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	245.1	
MB 500-512243/12-A	Method Blank	Total/NA	Water	245.1	
LCS 500-512243/13-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 512472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	245.1	512243
MB 500-512243/12-A	Method Blank	Total/NA	Water	245.1	512243
LCS 500-512243/13-A	Lab Control Sample	Total/NA	Water	245.1	512243

Prep Batch: 512642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	200.8	
MB 500-512642/1-A	Method Blank	Total/NA	Water	200.8	
LCS 500-512642/2-A	Lab Control Sample	Total/NA	Water	200.8	

Analysis Batch: 513090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	200.8	512642
MB 500-512642/1-A	Method Blank	Total/NA	Water	200.8	512642
LCS 500-512642/2-A	Lab Control Sample	Total/NA	Water	200.8	512642

General Chemistry

Analysis Batch: 511186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	218.6	
MB 500-511186/3	Method Blank	Total/NA	Water	218.6	
LCS 500-511186/4	Lab Control Sample	Total/NA	Water	218.6	

General Chemistry

Analysis Batch: 512664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	218.6 CR3	

Prep Batch: 513387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	Distill/Phenol	
MB 500-513387/1-A	Method Blank	Total/NA	Water	Distill/Phenol	
LCS 500-513387/2-A	Lab Control Sample	Total/NA	Water	Distill/Phenol	

Prep Batch: 513413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	Distill/CN	
MB 500-513413/1-A	Method Blank	Total/NA	Water	Distill/CN	
HLCS 500-513413/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 500-513413/3-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LLCS 500-513413/4-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 513456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	420.4	513387
MB 500-513387/1-A	Method Blank	Total/NA	Water	420.4	513387
LCS 500-513387/2-A	Lab Control Sample	Total/NA	Water	420.4	513387

Analysis Batch: 513887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	SM 4500 CN E	513413
MB 500-513413/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	513413
HLCS 500-513413/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	513413
LCS 500-513413/3-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	513413
LLCS 500-513413/4-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	513413

Analysis Batch: 651420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	1664A	
MB 460-651420/1	Method Blank	Total/NA	Water	1664A	
LCS 460-651420/2	Lab Control Sample	Total/NA	Water	1664A	
LCSD 460-651420/3	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 651520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	350.1	

Analysis Batch: 651700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	SM 2540D	
MB 460-651700/1	Method Blank	Total/NA	Water	SM 2540D	
LCSSRM 460-651700/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 651819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-161531-2	MW-11	Total/NA	Water	SM 4500 Cl F	
MB 460-651819/1	Method Blank	Total/NA	Water	SM 4500 Cl F	

General Chemistry (Continued)

Analysis Batch: 651819 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSSRM 460-651819/2	Lab Control Sample	Total/NA	Water	SM 4500 Cl F	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Client Sample ID: MW-11

Date Collected: 10/24/19 13:58
Date Received: 10/25/19 08:00

Lab Sample ID: 480-161531-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	500891	10/29/19 16:35	LCH	TAL BUF
Total/NA	Analysis	8260C		4	500607	10/28/19 15:45	KMN	TAL BUF
Total/NA	Analysis	8260C SIM		1	651593	10/31/19 08:10	KLB	TAL EDI
Total/NA	Prep	625			500762	10/28/19 15:24	ATG	TAL BUF
Total/NA	Analysis	625.1		1	500899	10/29/19 19:30	JMM	TAL BUF
Total/NA	Prep	3510C			651416	10/30/19 09:46	DXD	TAL EDI
Total/NA	Analysis	8270D SIM		1	651561	10/31/19 02:46	YAH	TAL EDI
Total/NA	Prep	3510C			500883	10/29/19 08:22	JMP	TAL BUF
Total/NA	Analysis	608.3		10	501296	10/30/19 21:46	W1T	TAL BUF
Total/NA	Analysis	300.0		60	651804	10/31/19 10:47	VMI	TAL EDI
Total/NA	Prep	200.8			512642	10/30/19 08:44	LMN	TAL CHI
Total/NA	Analysis	200.8		1	513090	10/31/19 14:53	FXG	TAL CHI
Total/NA	Prep	245.1			512243	10/28/19 11:05	MJG	TAL CHI
Total/NA	Analysis	245.1		1	512472	10/29/19 08:18	MJG	TAL CHI
Total/NA	Analysis	1664A		1	651420	10/30/19 11:53	AAA	TAL EDI
Total/NA	Analysis	218.6		1	511186	11/01/19 15:22	MTB	TAL CHI
Total/NA	Analysis	218.6 CR3		1	512664	10/30/19 09:32	MTB	TAL CHI
Total/NA	Analysis	350.1		1	651520	10/30/19 16:20	AJP	TAL EDI
Total/NA	Prep	Distill/Phenol			513387	11/04/19 09:10	TT	TAL CHI
Total/NA	Analysis	420.4		1	513456	11/04/19 12:08	TT	TAL CHI
Total/NA	Analysis	SM 2540D		1	651700	10/31/19 09:09	PLS	TAL EDI
Total/NA	Analysis	SM 4500 Cl F		1	651819	10/31/19 15:55	HTV	TAL EDI
Total/NA	Prep	Distill/CN			513413	11/04/19 10:25	MS	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	513887		MS	TAL CHI
					(Start)	11/04/19 15:46		
					(End)	11/04/19 15:46		

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Massachusetts	State Program	M-NY044	06-30-20

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
608.3	3510C	Water	PCB-1016
608.3	3510C	Water	PCB-1221
608.3	3510C	Water	PCB-1232
608.3	3510C	Water	PCB-1242
608.3	3510C	Water	PCB-1248
608.3	3510C	Water	PCB-1254
608.3	3510C	Water	PCB-1260
608.3	3510C	Water	PCB-1262
608.3	3510C	Water	PCB-1268
624.1		Water	Total BTEX
625.1	625	Water	2-Methylphenol
8260C		Water	Ethanol
8260C		Water	Methyl tert-butyl ether
8260C		Water	Tert-amyl methyl ether

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
California	State	2903	04-30-20
Georgia	State	N/A	04-30-20
Georgia (DW)	State	939	04-30-20
Hawaii	State	NA	04-30-20
Illinois	NELAP	IL00035	04-30-20
Indiana	State	C-IL-02	04-30-20
Iowa	State	082	05-01-20
Kansas	NELAP	E-10161	11-01-20
Kentucky (UST)	State	AI # 108083	04-30-20
Kentucky (WW)	State	KY90023	12-31-19
Louisiana	NELAP	02046	06-30-20
Mississippi	State	NA	04-30-20
New York	NELAP	12019	04-01-20
North Carolina (WW/SW)	State	291	12-31-19
North Dakota	State	R-194	04-30-20
Oklahoma	State	8908	08-31-20
South Carolina	State	77001003	04-30-20
USDA	US Federal Programs	P330-18-00018	02-11-21
Wisconsin	State	999580010	08-31-20
Wyoming	State	8TMS-Q	04-30-20

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Laboratory: Eurofins TestAmerica, Edison

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

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State	<cert No.>	12-31-21
Georgia	State	12028 (NJ)	06-30-20
Massachusetts	State Program	M-NJ312	06-30-20
New Jersey	NELAP	12028	06-30-20
New York	NELAP	11452	04-01-20
Pennsylvania	NELAP	68-00522	02-28-20
Rhode Island	State	LAO00132	12-30-19
USDA	US Federal Programs	P330-18-00135	05-03-21

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL EDI
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL EDI
608.3	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL EDI
200.8	Metals (ICP/MS)	EPA	TAL CHI
245.1	Mercury (CVAA)	EPA	TAL CHI
1664A	HEM and SGT-HEM	1664A	TAL EDI
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	TAL CHI
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	TAL CHI
350.1	Nitrogen, Ammonia	MCAWW	TAL EDI
420.4	Phenolics, Total Recoverable	MCAWW	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL EDI
SM 4500 Cl F	Chlorine, Residual	SM	TAL EDI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI
200.8	Preparation, Total Metals	EPA	TAL CHI
245.1	Preparation, Mercury	EPA	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL EDI
5030C	Purge and Trap	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL EDI
625	Liquid-Liquid Extraction	40CFR136A	TAL BUF
Distill/CN	Distillation, Cyanide	None	TAL CHI
Distill/Phenol	Distillation, Phenolics	None	TAL CHI

Protocol References:

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

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

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-161531-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-161531-2	MW-11	Water	10/24/19 13:58	10/25/19 08:00	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-1

Login Number: 161531
List Number: 1
Creator: Mason, Becky C

List Source: Eurofins TestAmerica, Buffalo

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

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-1

Login Number: 161531
List Number: 2
Creator: Buckley, Paula M

List Source: Eurofins TestAmerica, Chicago
List Creation: 10/25/19 12:15 PM

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	3.0
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.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-161531-1

Login Number: 161531
List Number: 3
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 10/29/19 11:56 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	988482
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3°C IR9
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.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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

360325-Boston

Chain of Custody Record

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360325-Buffalo 360325

Client Information	Sampler: Katie Daily	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-137430-30904.1
Client Contact: Janel Connolly	Phone:	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 1 Executive Drive Suite 303	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Chelmsford	TAT Requested (days): P.O 480-161531			
State, Zip: MA, 01824				
Phone:	PO #: BN030015			
Email: Janel.Connolly@arcadis-us.com	WO #:			
Project Name: Lightcliff	Project #: 48012644			
Site:	SSOW#:			

480-161531 Chain of Custody

J - DI Water; K - EDTA; L - EDA; 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)	8270D_SIM - 8270 SIM	350.1 - Nitrogen, Ammonia	4500_Cl_F - Chlorine, Residual	8260C_SIM - EDB/1,4 Dioxane SIM	2540D - TSS	1664A_NP - 1664	300_ORGFM_28D - Chloride	624_5ml - VOC	8260C - MTBE / TAME/ Ethanol	625 - SVOC	608_PCB - PCB	200.8, 245.1	420.4 - Phenol	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	S	N	A	N	A	N	A	A	N	N	D	S		
Steep Brook	10/24/19	11:45	G	Water				1	1									1		3	
MW-11	10/24/19	1:58pm	G	Water			2	1	1	2	1	2	1	3	3	2	2	1	1	22	

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
Katie Daily	10/24/19 16-	Arcadis		10/24/19 16:	TA
	10/24/19 17-	TA	Cwallace	10/26/19 0800	TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		#1 3.2

Ver: 01/16/2019

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

360325-Boston

Chain of Custody Record

360325-Boston

eurofins | Environment TestAmerica

Client Information	Sampler: Kathe Daley	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-137430-30904.2
Client Contact: Janet Connolly	Phone:	E-Mail: becky.mason@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:

Address: 1 Executive Drive Suite 303	Due Date Requested:
City: Chelmsford	TAT Requested (days): P.O. 480-16153
State, Zip: MA, 01824	
Phone:	PO #: BN030015
Email: Janet.Connolly@arcadis-us.com	WO #:
Project Name: Lightolier	Project #: 48012644
Site:	SSOW#:

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	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)	218.6 - Chromium, Hexavalent	4500_CN_E - Cyanide, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	B		
				Water						
MW-11	10/24/19	2:00	G	Water			1	1	2	

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
Kathe Daley	10/24/19 16	TA		10/24/19 16	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/24/19 17	TA	Cwalker	10/26/19 0800	TA
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: 01/16/2019

480-161531 Waybill

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 500-127847.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: becky.mason@testamericainc.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Massachusetts		Job #: 480-161531-1
Address: 777 New Durham Road, ,	Due Date Requested: 10/31/2019			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817	PO #:			
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	WO #:			
Email:				
Project Name: Lightolier	Project #: 48012644			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	350.1/ Nitrogen, Ammonia	8270D_SIM/3510C_LVI 8270 SIM	8260C_SIM/5030C EDB/1,4 Dioxane SIM	1664A_NP/ 1664	2540D/ TSS	300_ORGFM_28D/ Chloride	4500_Cl_F/ Chlorine, Residual	9040C/ (MOD) Local Method	1020B				Total Number of containers	Special Instructions/Note:
STEEP BROOK (480-161531-1)	10/24/19	11:45 Eastern		Water				X													1	
MW-11 (480-161531-2)	10/24/19	13:58 Eastern		Water				X	X	X	X	X	X	X	X	X					1	

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

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

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 10/28/19 1600	Company	Received by: Fedex	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/29/19 9:02	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: 988482	Cooler Temperature(s) °C and Other Remarks: 33.19

Ver: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-52646.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: becky.mason@testamericainc.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Massachusetts		Job #: 480-161531-1
Address: 777 New Durham Road, ,	Due Date Requested: 10/31/2019			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: Lightolier	Project #: 48012644			
Site:	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	350.1/ Nitrogen, Ammonia	8270D_SIM/3510C_LVI 8270 SIM	8260C_SIM/5030C EDB/1,4 Dioxane SIM	1664A_NP/ 1664	2540D/ TSS	300_ORGFM_28D/ Chloride	4500_Cl_F/ Chlorine, Residual	9040C/ (MOD) Local Method	1020B	Total Number of containers	Special Instructions/Note:
		Preservation Code:															
~~STEEP BROOK (480-161531-1)~~	~~10/24/19~~	11:45 Eastern		Water			X										
MW-11 (480-161531-2)	10/24/19	13:58 Eastern		Water			X	X	X	X	X	X	X	X	X	10	

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

Possible Hazard Identification: Unconfirmed	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) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Cameron Cikolb	10/29/19 1700	TAL	Angela Pinilla via FEDEX	10/30/19 9:20	TAE Edison
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: 975115	Cooler Temperature(s) °C and Other Remarks: 3.5°C IR#9

Ver: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Katie Daily	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-137430-30904.1
Client Contact: Janet Connolly	Phone:	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 1 Executive Drive Suite 303	Due Date Requested:			
City: Chelmsford	TAT Requested (days):			
State, Zip: MA, 01824				
Phone:	PO #: BN030015			
Email: Janet.Connolly@arcadis-us.com	WO #:			
Project Name: Lightcliffe	Project #: 48012644			
Site:	SSOW#:			

Analysis Requested

480-161531 COC

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)	8270D_SIM - 8270 SIM	350.1 - Nitrogen, Ammonia	4500_Cl_F - Chlorine, Residual	8260C_SIM - EDB/1,4 Dioxane SIM	2540D - TSS	1664A_NP - 1664	300_ORGFM_28D - Chloride	624_5ml - VOC	8260C - MTBE / TAME/ Ethanol	625 - SVOC	608_PCB - PCB	200.8, 245.1	420.4 - Phenol	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	S	N	A	N	A	N	A	A	N	N	D	S		
Steep Brook	10/24/19	11:45	G	Water				1	1									1		3	
MW-11	10/24/19	1:58pm	G	Water			2	1	1	2	1	2	1	3	3	2	2	1	1	22	

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:

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	Katie Daily	10/24/19 16-	Arcadis		10/24/19 16-	
2		10/24/19 17-		Pamela Buckley	10/25/19 0900	TA
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.0

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Katie Daley	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 180-137430-30904.2
Client Contact: Janet Connolly	Phone	E-Mail: becky.mason@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S., Inc.				Job #:
Address: 1 Executive Drive Suite 303	Due Date Requested:			
City: Chelmsford	TAT Requested (days):			
State, Zip: MA, 01824				
Phone:	PO #: BN030015			
Email: Janet.Connolly@arcadis-us.com	WO #:			
Project Name: Lightolier	Project #: 48012644			
Site:	SSOW#:			

Analysis Requested

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

Sample Identification	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)	218.6 - Chromium, Hexavalent	4500_CN_E - Cyanide, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	B		
				Water						
MW-11	10/24/19	2:00	G	Water			1	1	2	

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	Katie Daley	10/24/19 16			10/24/19 16	
2		10/24/19 17		Paula Burkley	10/25/19 0900	TA
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.0

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 480-178285-1
Client Project/Site: Lightolier

For:
ARCADIS U.S., Inc.
1 Executive Drive
Suite 303
Chelmsford, Massachusetts 01824

Attn: Janet Connolly

Authorized for release by:
11/19/2020 4:54:13 PM
Steve Hartmann, Project Manager I
(413)572-4000
Steve.Hartmann@Eurofinset.com

Designee for

Becky Mason, Project Manager II
(413)572-4000
Becky.Mason@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Job ID: 480-178285-1
Project/Site: Lightolier

Glossary

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

Job ID: 480-178285-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-178285-1

Comments
No additional comments.

Receipt
The sample was received on 11/18/2020 8:00 AM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.4º C.

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Client Sample ID: MW-11

Lab Sample ID: 480-178285-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	64		4.0	1.1	mg/L	1		SM 2340C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Client Sample ID: MW-11
Date Collected: 11/16/20 10:05
Date Received: 11/18/20 08:00

Lab Sample ID: 480-178285-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	64		4.0	1.1	mg/L			11/19/20 14:00	1

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-560003/3
Matrix: Water
Analysis Batch: 560003

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		4.0	1.1	mg/L			11/19/20 14:00	1

Lab Sample ID: LCS 480-560003/4
Matrix: Water
Analysis Batch: 560003

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hardness as calcium carbonate			109	112		mg/L		103	90 - 110		

Lab Sample ID: 480-178285-1 DU
Matrix: Water
Analysis Batch: 560003

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Hardness as calcium carbonate	64			60.0		mg/L				6	15

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

General Chemistry

Analysis Batch: 560003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-178285-1	MW-11	Total/NA	Water	SM 2340C	
MB 480-560003/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-560003/4	Lab Control Sample	Total/NA	Water	SM 2340C	
480-178285-1 DU	MW-11	Total/NA	Water	SM 2340C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Client Sample ID: MW-11
Date Collected: 11/16/20 10:05
Date Received: 11/18/20 08:00

Lab Sample ID: 480-178285-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2340C		1	560003	11/19/20 14:00	KEB	TAL BUF

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	Identification Number	Expiration Date
Massachusetts	State	M-NY044	06-30-21

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Method	Method Description	Protocol	Laboratory
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lightolier

Job ID: 480-178285-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-178285-1	MW-11	Water	11/16/20 10:05	11/18/20 08:00	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 480-178285-1

Login Number: 178285

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Yeager, Brian A

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

TestAmerica Westfield
501 Southampton Road
Westfield MA 01085
Phone: (413) 572-4000 Fax: (303) 467-7551

Boston #215

TestAmerica Boston
240 Bear Hill Road -- Suite 104
Waltham MA 02451
Phone: (781) 466-6900 Fax: (781) 466-6901

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information:	Sample Collector's Name (Please Print Neatly): Diane Champagne	Lab PM: Becky Mason	Lab COC Barcode Label	COC No: 40444
Client Contact: Tom Duffy	Sample Collector's Phone: 978-505-1120	E-Mail:		Page: 1 of 1
Company: Arcadis		Analysis Requested		Job #:
Address:	Due Date Requested: 3 day			Preservation Codes: A - Hydrochloric Acid; B - Sodium Hydroxide; C - Zinc Acetate; D - Nitric Acid; E - Sodium Bisulfite; - Methanol; Ascorbic Acid; J - Deionized Water; M - Hexane; N - No Preservative; P - Sodium Sulfate; Q - Sodium Sulfite; R - Sodium Thiosulfate; S - Sulfuric Acid; Z - other (specify)
City: Braintree MA	Turnaround Time (TAT) Requested (business days): 3day			
State and Zip: MA				
Client's Phone:	Quote # or Project #:			
Client's Contact Email: Tom.duffy@arcadis.com	PO #:			atory Programs: GW1/S1; CT RSR; EDD Required; NPDES
Client's Project Name/Number: Lightolier	WO #:			
Sample Collection Site Name & Location: Fall River MA	PWS ID #:			

Sample Identification	Sample Collection Date (MM/DD/YY)	Sample Collection Time (24 Hour Clock)	Sample Type: C=Comp G=Grab	Matrix Type **	Hardness	Total Num.	Special Instructions & Notes:
			Preservation Codes ▸				
MW-11	11/16/20	1005	G	GW	X		

480-178285 Chain of Custody

SUBCONTRACT POLICY: Unless you provide instructions to the contrary, or specify which sub-contract labs are or are not to be used, you agree in advance to permit TestAmerica to use certified subcontract labs, without any additional notification made by us, as necessary to fulfill your work order.

Possible Hazard Identification (please check off each that may apply):
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

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

** **Matrix Types**: A=Air S=Solid/Soil W=Water O=Oil X=Waste (non-water) Z=Other: _____

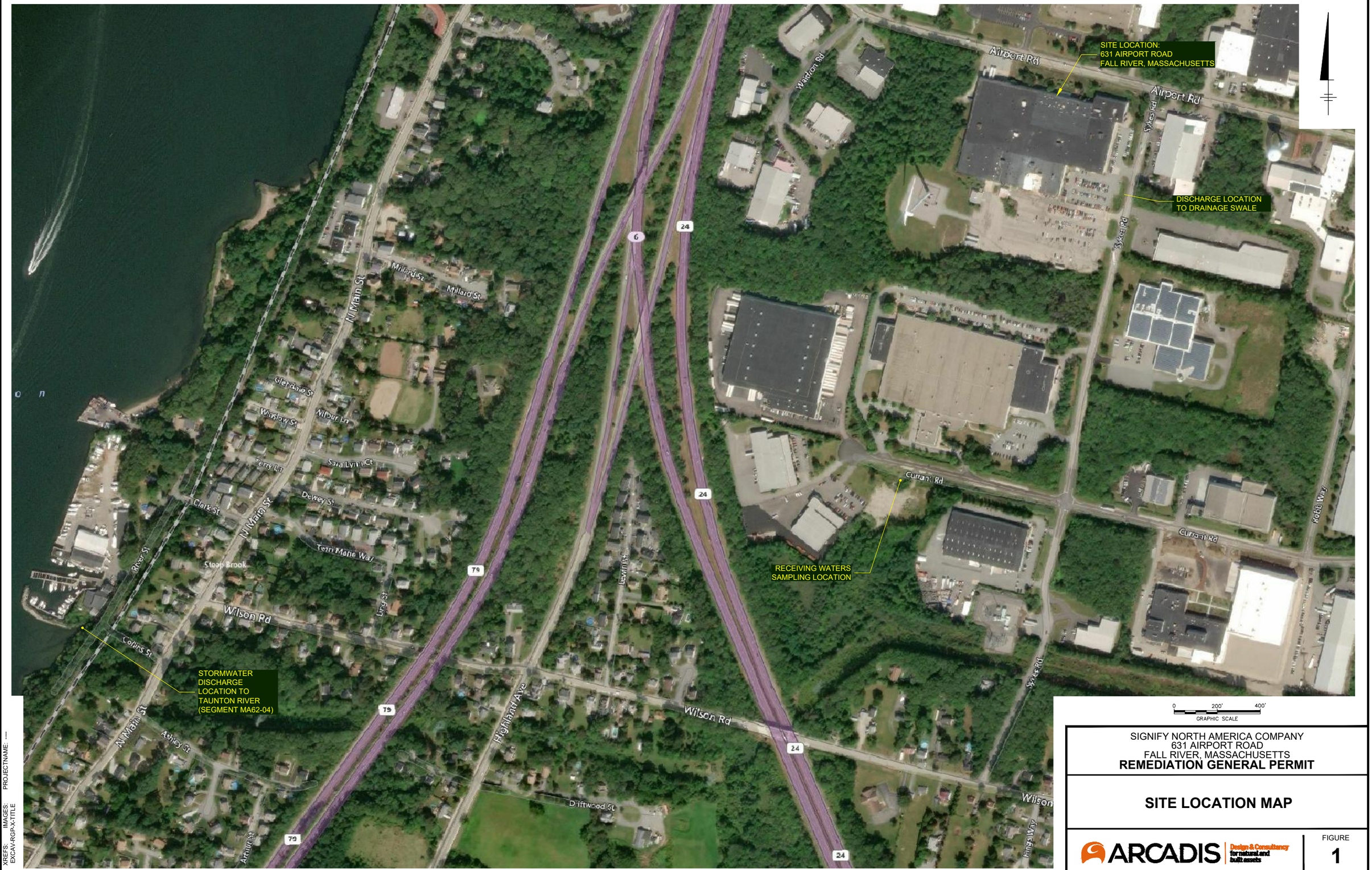
▸ NOTE!! ALL SAMPLES MUST BE TRANSPORTED IN A COOLER, ON ICE !! ◂

	Date/Time	Company		Date/Time	Company
Relinquished by:	11/16/20 1705	Arcadis	Received by:	11/16/20 1705	ETA
Relinquished by:	11/17/20 700	ETA	Received by:		
Relinquished by:			Received by:	11/18/20 800	MSK

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.4 #1

Section D(1) – Location Map



SIGNIFY NORTH AMERICA COMPANY
631 AIRPORT ROAD
FALL RIVER, MASSACHUSETTS
REMEDIATION GENERAL PERMIT

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

C:\Users\steinberger\BIM 360\Arcadis\ANA - PHILIPS LIGHTING CO\Project Files\Lightoler-2018\A\2020\3000493301-DWG\EXCAV-RGP-FIG01-LOC-MAP.dwg LAYOUT: 1 SAVED: 1/10/2020 11:02 AM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL-240.CTB PLOTTED: 1/10/2020 11:02 AM BY: STEINBERGER, GEORGE
XREFS: IMAGES: PROJECTNAME: ----
EXCAV-RGP-X-TITLE

Section D(4) – Dilution Factor, WQBEL Calculation Results

Enter number values in green boxes below

Enter values in the units specified

↓

0.00035	Q_R = Enter upstream flow in **MGD**
0.036	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

1.01

Enter values in the units specified

↓

64	C_d = Enter influent hardness in **mg/L** $CaCO_3$
48	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

Enter **receiving water** concentrations in the units specified

↓

6.57	pH in **Standard Units**
25	Temperature in **°C**
0	Ammonia in **mg/L**
48	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0.1	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
0	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
18	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
0.63	Ammonia in **mg/L**
0	Antimony in **µg/L**
0.42	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
9000	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
8.4	Zinc in **µg/L**
0	Cyanide in **µg/L**
0.0053	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved

Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry

Discharge flow is equal to the design flow or 1 MGD, whichever is less

Only if approved by State as the entry for Q_R; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State

Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges

Hardness required for freshwater

Salinity required for saltwater (estuarine and marine)

Metals required for all discharges if present and if dilution factor is > 1

Enter 0 if non-detect or testing not required

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

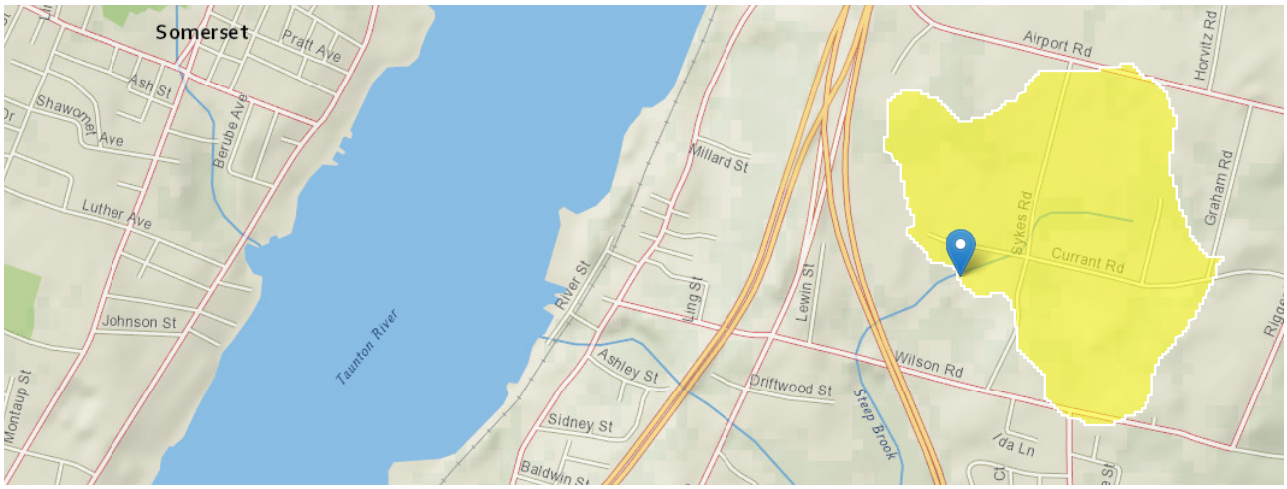
Enter 0 if non-detect or testing not required

Dilution Factor	1.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	0.2	mg/L	**11**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	646	µg/L		
Arsenic	**104**	µg/L	10	µg/L		
Cadmium	**10.2**	µg/L	0.1960	µg/L		
Chromium III	**323**	µg/L	60.3	µg/L		
Chromium VI	**323**	µg/L	11.5	µg/L		
Copper	**242**	µg/L	6.4	µg/L		
Iron	5000	µg/L	**1010**	µg/L		
Lead	**160**	µg/L	1.81	µg/L		
Mercury	**0.739**	µg/L	0.91	µg/L		
Nickel	**1450**	µg/L	36.0	µg/L		
Selenium	**235.8**	µg/L	5.0	µg/L		
Silver	**35.1**	µg/L	1.8	µg/L		
Zinc	**420**	µg/L	82.6	µg/L		
Cyanide	**178**	mg/L	5.3	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	303	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	1.6	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	3.3	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			

D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	2.2	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	20	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

StreamStats Report

Region ID:	MA
Workspace ID:	MA20191023192142495000
Clicked Point (Latitude, Longitude):	41.74156, -71.11716
Time:	2019-10-23 15:21:56 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.25	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	0.286	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

Low-Flow Statistics Parameters[Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.25	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	0.286	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Disclaimers[Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00356	ft^3/s
7 Day 10 Year Low Flow	0.000549	ft^3/s

Low-Flow Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

Therriault, Brian

From: Therriault, Brian
Sent: Wednesday, November 25, 2020 1:01 PM
To: Vakalopoulos, Catherine (DEP)
Subject: RE: Confirmation of Dilution Factor for NOI Filing for RTN 4-16359 - Former Lightolier Company, 631 Airport Road, Fall River, MA
Attachments: MALimitsBook_Lightolier.xlsx

Hi Cathy,

Thank you for this email and checking the dilution factor calculation. We have downsized the system and the max flow rate is now 25 gpm with the most limiting component being the air stripper. So, the dilution factor is now 1.01 for the proposed discharge with a design flow of 25 gpm and 7Q10 in Steep Brook of 0.000549 cfs from 631 Airport Rd, Fall River. I have attached the excel workbook with the calculation for your reference. Please let me know if this is correct according to your calculations.

I hope you have a nice Thanksgiving.

Thanks,
Brian

Brian Therriault PE | Principal Environmental Engineer | brian.therriault@arcadis.com
Arcadis | Arcadis-US.com
One Executive Drive, Suite 303 Chelmsford MA | 01824 | USA
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Professional Engineer / PE-MA, 48118

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From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Sent: Friday, November 20, 2020 7:48 PM
To: Therriault, Brian <Brian.Therriault@arcadis.com>
Subject: Re: Confirmation of Dilution Factor for NOI Filing for RTN 4-16359 - Former Lightolier Company, 631 Airport Road, Fall River, MA

Hi Brian,
Your dilution factor calculation of 1.005 is correct for this proposed discharge with a design flow of 50 gpm and 7Q10 in Steep Brook of 0.000549 cfs from 631 Airport Rd, Fall River.

You may already have this information, but here is water quality information requested in the NOI template:
Waterbody and ID: Steep Brook to Taunton River (MA62-04) within the Taunton River Watershed
Classification: SB (CSO)
Outstanding Resource Water?: no

State's most recent Integrated List is located here: https://www.epa.gov/sites/production/files/2020-01/documents/2016-ma-303d-list-report.pdf, search for "MA62-04" to see the causes of impairments
TMDLs: the Taunton River watershed has one approved TMDL for pathogens

Since this is a current MCP site, there is no additional fee required by MassDEP, and you do not have to submit the NOI via ePLACE.

Please let me know if you have any questions.

Cathy

Cathy Vakalopoulos, Acting NPDES Chief
Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026
Please consider the environment before printing this e-mail

From: "Therriault, Brian" <Brian.Therriault@arcadis.com>
Date: Friday, November 6, 2020 at 12:58 PM
To: "Vakalopoulos, Catherine (DEP)" <catherine.vakalopoulos@mass.gov>
Subject: Confirmation of Dilution Factor for NOI Filing for RTN 4-16359 - Former Lightolier Company, 631 Airport Road, Fall River, MA

Hi Cathy,

I am emailing you to confirm the dilution factor calculation for the preparation of a NOI for the Former Lightolier Company Site in Fall River, MA. I've attached the streamstat report. The system has a design flow rate of 50 gpm.

Based upon the 7Q10 value of 0.00549 ft3/sec and a max system design rate of 50 gpm, the attached excel workbook calculates the dilution factor as 1.005. Please confirm if this dilution factor is correct according to your calculation.

Thanks,
Brian

Brian Therriault PE | Principal Environmental Engineer | brian.therriault@arcadis.com
Arcadis | Arcadis-US.com
One Executive Drive, Suite 303 Chelmsford MA | 01824 | USA
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Professional Engineer / PE-MA, 48118

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Section E(4) – Process Schematic

OUTSIDE TREATMENT SYSTEM

INSIDE TREATMENT SYSTEM

FROM SUMP 2

FROM SUMP 3

FROM CONTINGENCY

WELL VAULT

1" W PVC

1" A HDPE

½" A GS

½"x¾"

¾" A GS

PNEUMATIC PUMP
MANF: QED
MODEL: AP LONG TOP LOADING

SUMP 1 (TYP.)

OIL WATER SEPARATOR 50 GPM

LNAPL STORAGE TANK

LS 301

LAHH 301 R

HS 210 H-O-A

FL 210 R
HIGH AMPERAGE FAILURE

TRANSFER PUMP
1.5 HP

LS 403

LS 402

LS 401

LAHH 403 R

BLOWER
3 HP

AIR STRIPPER
25 GPM

TIS 411

TS 411 R

HS 410 H-O-A

FL 410 R
HIGH AMPERAGE FAILURE

FL 420 R
HIGH AMPERAGE FAILURE

HS 420 H-O-A

TRANSFER PUMP
50 GPM @ 100' HEAD
3 HP

BAG FILTERS

EFFLUENT TO SWALE

FLOW TOTALIZER

VAPOR DISCHARGE TO STACK

PT 500

FL 500 R
FAULT

AIR COMPRESSOR
10 HP

PI

SP

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XREFS: IMAGES: PROJECTNAME: ---
EXCAV-RGP-X-TITLE

SIGNIFY NORTH AMERICA COMPANY
631 AIRPORT ROAD
FALL RIVER, MASSACHUSETTS
REMEDIATION GENERAL PERMIT

PROCESS SCHEMATIC

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

Sections G(2) and H(2) – ESA and NHPA Eligibility Determination

Sections G and H: ESA and NHPA Eligibility Supplemental Information

G(2). Endangered Species Act eligibility determination

Based on the review of available site information, FWS Criterion A was selected. Please see attached Federally Listed Endangered and Threatened Species in Massachusetts table. There are no listed species in the town of Fall River, MA. See also the Environmental Receptors Map figure for reference. Features include NHESP certified and potential vernal pools, priority habitats of rare wildlife, and ecoregions.

H(2). National Historic Preservation Act eligibility determination

Criterion A was selected. Based on the review of the National Register of Historic Places and the Massachusetts Cultural Resource Information System did not identify any site which would be adversely impacted due to activities regulated under the RGP. Please see attached search results.

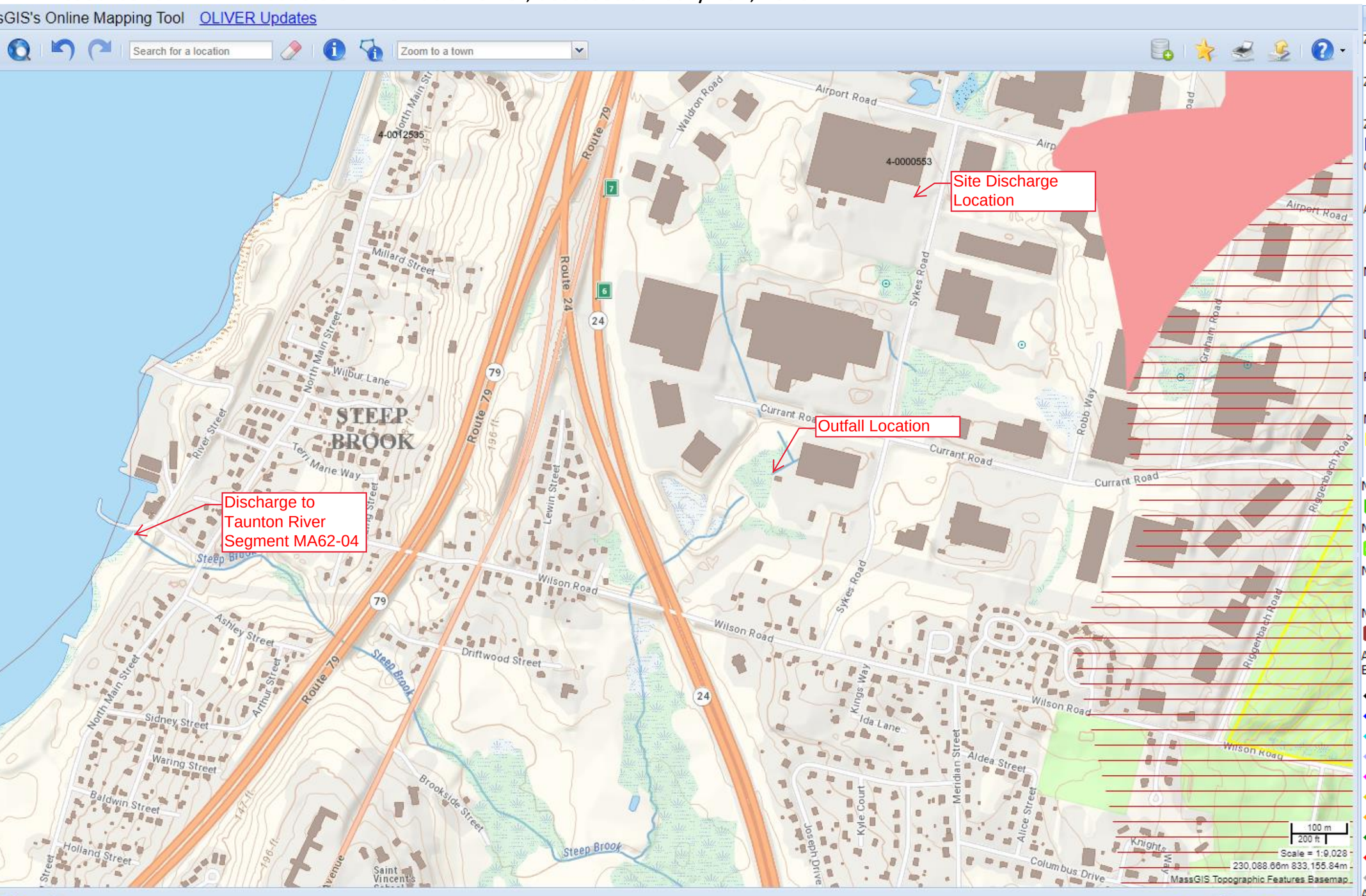
FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hadley, Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Revised 06/22/2009

Environmental Receptors Map – Signify North America Company, 631 Airport Rd, Fall River, MA
Resource: OLIVER – MassGIS Online Data Viewer, accessed January 10th, 2020



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Fall River; Street Name: Sykes Rd; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year