CDW CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

May 16, 2017

U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912
ATTN: Remediation General Permit NOI Processing

Re: Notice of Intent for Coverage Under EPA's 2016 Remediation General Permit
1012 Broadway, Chelsea, MA
CDW Project # 1412.00

To Whom It May Concern:

CDW Consultants, Inc. (CDW) is submitting this Notice of Intent (NOI) on behalf of Broadway Hotel, LLC for coverage under the United States Environmental Protection Agency's (EPA's) 2016 Remediation General Permit (RGP) under EPA's National Pollutants Discharge Elimination System (NPDES) program. The RGP is required for contaminated site dewatering during construction activities for development of a new hotel at the above-referenced site. A NOI was submitted for coverage under EPA's 2010 RGP on February 6, 2017. Discharge under the 2010 permit commenced on May 3, 2017.

Construction activities will take place on a 1.45 acre parcel known as 1012 Broadway that is listed as a disposal site under the Massachusetts Contingency Plan (MCP). The property has been listed as a disposal site since April 1989 with the Massachusetts Department of Environmental Protection (MassDEP) under Release Tracking Number (RTN) 3-2069. Known contaminants in groundwater at the Site include chlorinated and non-chlorinated volatile organic compounds (VOCs), petroleum hydrocarbons, and polycyclic aromatic hydrocarbons (PAHs). The VOCs and petroleum were attributed to the historical use of the Site for the production of adhesives, glues, and coatings by the American Chemical and Finish Company, as well as other prior occupants that manufactured lacquers and varnishes. The dewatering is occurring in conjunction with an MCP Release Abatement Measure (RAM) to manage contaminated soils and groundwater during excavations for the building foundations and utilities.

CDW collected a sample of the influent on May 3, 2017 for VOCs, total metals, fuels parameters, polychlorinated biphenyls (PCBs), total phenols, chloride, total cyanide, total suspended solids (TSS), total residual chlorine (TRC), trivalent chromium, hexavalent chromium, 1,4-dioxane, ammonia, and semi-volatile organic compounds (SVOCs). Our proposed groundwater treatment

system for this project consists of a weir tank, fractionation tank, bag filters to remove suspended solids, dual carbon treatment units, cation and anion exchange vessels and a cartridge filter before discharging to the Mill Creek. Dewatering will be intermittent and will not be conducted at all locations during construction.

In addition to the NOI application form, we have attached:

- Figure 1: Water Flow Schematic and Discharge Location
- Figure 2: Water Treatment System Schematic
- Figure 3: Priority Resource Areas Map
- Documentation of the Results of the ESA Eligibility Determination
- Endangered Species Act Documentation
- Massachusetts Cultural Resource Information Report
- WQBEL Calculations
- ESS Laboratory Analytical Data Reports

Please call if you have any questions.

Very truly yours,
CDW CONSULTANTS, INC.

Brian J. Miller, LSP
Project Manager

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:</td><td colspan="3">Site address: 1012 Broadway
Street:</td></tr>
<tr><td>City: Chelsea</td><td>State: MA</td><td>Zip: 02150</td></tr>
<tr><td rowspan="4">2. Site owner
Broadway Hotel, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Jarrod Billingsley</td></tr>
<tr><td colspan="2">Telephone: 603-623-8811</td><td>Email: jbillingsley@xsshotels.com</td></tr>
<tr><td colspan="3">Mailing address: 1359 Hooksett Road
Street:</td></tr>
<tr><td>City: Hooksett</td><td>State: NH</td><td>Zip: 03106</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
J. Masterson Construction</td><td colspan="3">Contact Person: William Peach</td></tr>
<tr><td colspan="2">Telephone: 978-774-8782</td><td>Email: wpeach@jmasterson.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 46 Prince Street</td></tr>
<tr><td>City: Danvers</td><td>State: MA</td><td>Zip: 01923</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):
3-2069
☐ 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):
Mill Creek	Segment MA71-08	SB(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: The Mill Creek containing tidal flats and salt marshes is located adjacent to the Site

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. Yes, PCB in fish tissue, fecal coliform

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.	NA
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.	NA

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:

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: Chlorinated VOCs, Petroleum, PAHs, Metals, Cyanide	
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): Direct to Receiving Water	Outfall location(s): (Latitude, Longitude) 42.4036 -71.0186
Discharges enter the receiving water(s) via (check any that apply): ■ Direct discharge to the receiving water ☐ Indirect discharge, if so, specify: ☐ 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): May 2017 to October 2017 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	100	2010	2010	Report mg/L	---
Chloride		✔	1	300	500000	1380000	1380000	Report µg/l	---
Total Residual Chlorine	✔		1	4500 Cl E	10			0.2 mg/L	7.5 ug/l
Total Suspended Solids		✔	1	2540D	5000	12000	12000	30 mg/L	---
Antimony	✔		1	200.9	5			206 µg/L	640 ug/l
Arsenic		✔	1	200.9	2	2.4	2.4	104 µg/L	36 ug/l
Cadmium	✔		1	200.7	2			10.2 µg/L	8.9 ug/l
Chromium III	✔		1	200.7	10			323 µg/L	100 ug/l
Chromium VI		✔	1	7196A	10	26	26	323 µg/L	50 ug/l
Copper		✔	1	200.7	4	18.5	18.5	242 µg/L	3.7 ug/l
Iron		✔	1	200.7	40	499	499	5,000 µg/L	5,000 ug/l
Lead		✔	1	200.7	8	10.8	10.8	160 µg/L	8.5ug/l
Mercury	✔		1	245.1	0.2			0.739 µg/L	1.11 ug/l
Nickel	✔		1	200.7	4			1,450 µg/L	8.3 ug/l
Selenium	✔		1	200.9	4			235.8 µg/L	71 ug/l
Silver	✔		1	200.7	2			35.1 µg/L	2.2ug/l
Zinc	✔		1	200.7	20			420 µg/L	86 ug/l
Cyanide		✔	1	4500 CN	5	6.84	6.84	178 mg/L	1 ug/l
B. Non-Halogenated VOCs									
Total BTEX	✔		1	624	1			100 µg/L	---
Benzene	✔		1	624	1			5.0 µg/L	---
1,4 Dioxane		✔	1	522	0.5	32	32	200 µg/L	---
Acetone	✔		1	624	10			7.97 mg/L	---
Phenol	✔							1,080 µg/L	300 ug/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			4.4 µg/L	1.6 ug/l
1,2 Dichlorobenzene	✔		1	624	1			600 µg/L	---
1,3 Dichlorobenzene	✔		1	624	1			320 µg/L	---
1,4 Dichlorobenzene	✔		1	624	1			5.0 µg/L	---
Total dichlorobenzene	✔		1	624	1			763 µg/L in NH	---
1,1 Dichloroethane		✔	1	624	20	385	385	70 µg/L	---
1,2 Dichloroethane	✔		1	624	1			5.0 µg/L	---
1,1 Dichloroethylene		✔	1	624	1	1.7	1.7	3.2 µg/L	---
Ethylene Dibromide	✔		1	504.1	0.015			0.05 µg/L	---
Methylene Chloride		✔	1	624	2	3.3	3.3	4.6 µg/L	---
1,1,1 Trichloroethane		✔	1	624	20	738	738	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624	1			5.0 µg/L	---
Trichloroethylene		✔	1	624	1	4.6	4.6	5.0 µg/L	---
Tetrachloroethylene		✔	1	624	1	2.3	2.3	5.0 µg/L	3.3 ug/l
cis-1,2 Dichloroethylene		✔	1	624	1	1.5	1.5	70 µg/L	---
Vinyl Chloride	✔		1	624	1			2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625 SIM	2.34			190 µg/L	
Diethylhexyl phthalate	✔		1	625 SIM	2.34			101 µg/L	2.2 ug/l
Total Group I PAHs	✔		1	625 SIM	0.05			1.0 µg/L	---
Benzo(a)anthracene	✔		1	625 SIM	0.05			As Total PAHs	0.0038 ug/l
Benzo(a)pyrene	✔		1	625 SIM	0.05				0.0038 ug/l
Benzo(b)fluoranthene	✔		1	625 SIM	0.05				0.0038 ug/l
Benzo(k)fluoranthene	✔		1	625 SIM	0.05				0.0038 ug/l
Chrysene	✔		1	625 SIM	0.05				0.0038 ug/l
Dibenzo(a,h)anthracene	✔		1	625 SIM	0.05				0.0038 ug/l
Indeno(1,2,3-cd)pyrene	✔		1	625 SIM	0.05				0.0038 ug/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
Total Group II PAHs		✔	1	624 625	1and0.19	76.21	76.21	100 µg/L	---
Naphthalene		✔	1	624	1	76	76	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs		✔	1	608	0.47	4.02	4.02	0.000064 µg/L	---
Pentachlorophenol	✔		1	625 SIM	0.84			1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔	1	1664A	5000	9000	9000	5.0 mg/L	---
Ethanol	✔		1	D3695	5000			Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624	1			70 µg/L	20 ug/l
tert-Butyl Alcohol	✔		1	624	25			120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624	1			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(Influent)		✔	1	4500 H		6.70	6.70		
Temperature (Influent)		✔	1	2550		10.05 C	10.05 C		
pH (receiving water)		✔	1	4500 H		7.98	7.98		
Temperature (receiving water)		✔	1	2550		11.9 C	11.9 C		
Ammonia (receiving water)		✔	1	350.1	100	110	110		
Salinity (receiving water)		✔	1	2520B	0.1ppt	3.2 ppt	3.2ppt		

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:

cartridge filter

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.

Groundwater encountered during excavation activities will be pumped into a water treatment system prior to off site discharge. The first element of the water treatment system is a weir tank where solids will settle out. Water is gravity fed from the weir tank into a fractionation tank and then pumped through bag filtration, liquid phase reactivated carbon, cation and anion media exchange, and finally cartridge filtration.

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: cartridge filter

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: Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	50 gpm
Provide the proposed maximum effluent flow in gpm.	100 gpm
Provide the average effluent flow in gpm.	50 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.

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.

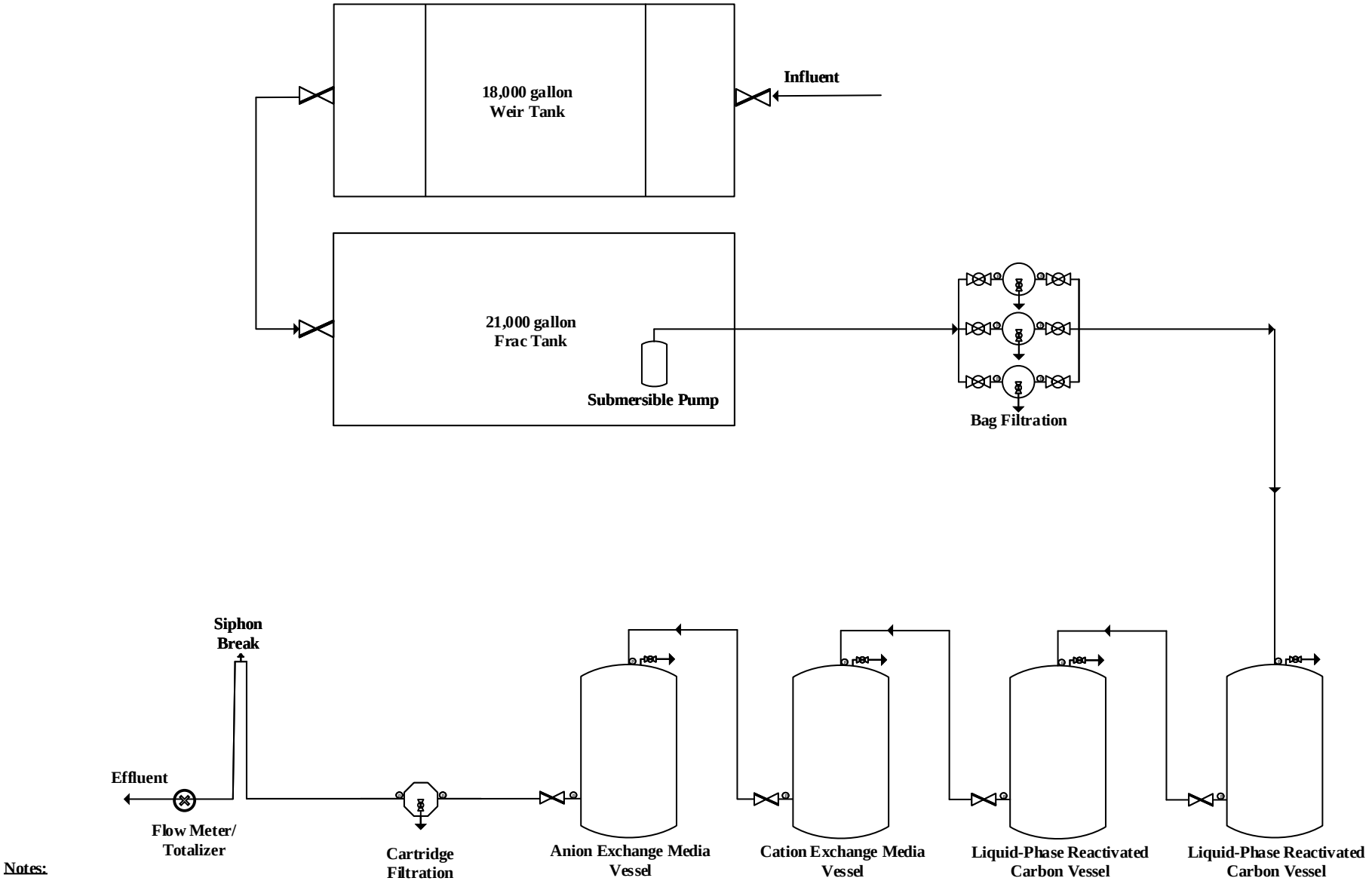
BMPP certification statement:	A BMPP will be developed and implemented that meets the requirements of this general permit.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ■
Notification provided to the municipality in which the discharge 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: 5/25/17
Print Name and Title:	William Reach Vice President

CDW CONSULTANTS, INC.

1012 BROADWAY
CHELSEA, MA

Figure 1 - Water Flow Schematic & Discharge Location Map

SOURCE: MASSGIS; Weston & Sampson Plan dated Jan. 2011 SCALE:1 inch = 100 feet

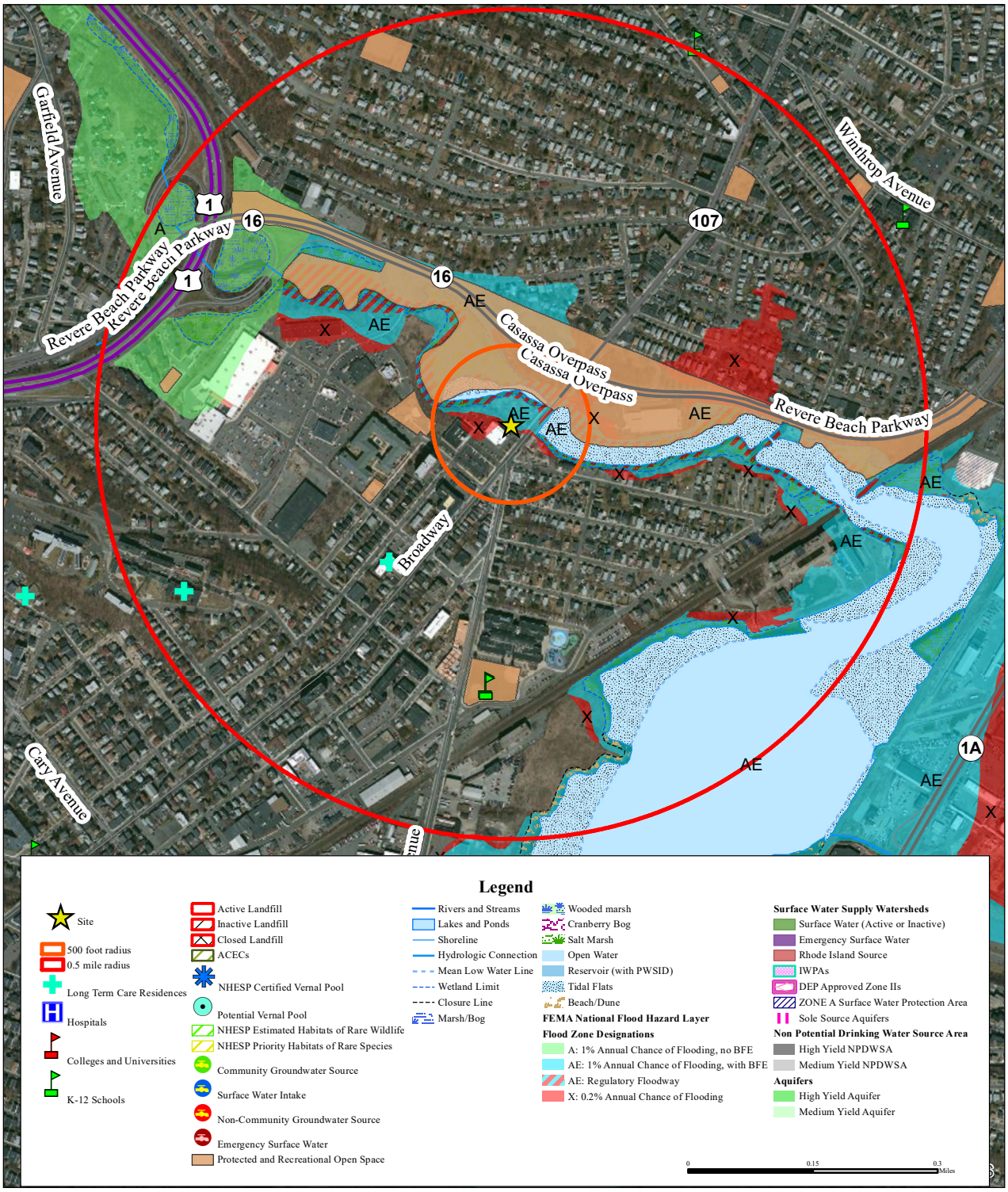


Notes:

1.) Figure is not to scale
2.) Sampling ports located on all treatment system components

Key:
Piping/Hose →

LRT Lockwood Remediation Technologies LLC	**Lockwood Remediation Technologies, LLC** **89 Crawford Street** **Leominster, MA 01453** **Office: 774-450-7177** **DESIGNED BY:** LRT **DRAWN BY:** B. Watkins **CHECKED BY:** **DATE:**	**Figure 2 - Water Treatment System Schematic**	1012-1018 Broadway Chelsea, Massachusetts	**PROJECT No.** 2-1479	**FIGURE No.** 2



CDW CONSULTANTS, INC.

1012 BROADWAY
CHELSEA, MA

Figure 3 - Priority Resource Areas Map

SOURCE: MASSGIS

SCALE: 1 inch = 967 feet

Documentation of the Results of the ESA Eligibility Determination:

Using Appendix I and information in Appendix II of the NPDES RGP, the 1012 Broadway, Chelsea project is eligible for coverage under this general permit under FWS Criterion C. The 1012 Broadway, Chelsea project is located adjacent to the City of Revere in Suffolk County. There are no Endangered Species in Suffolk County according to the Federally Listed Endangered and Threated Species in Massachusetts List Updated 2/5/2016 available on the U.S. Fish & Wildlife Service New England Field Office webpage. A copy of the Federally Listed Endangered and Threated Species in Massachusetts List Updated 2/5/2016 is attached. No designated critical habitats were listed in Suffolk County.

An Endangered Species Consultation per the attached instructions which were provided on U.S. Fish & Wildlife Service New England Field Office ECOS IPaC webpage was conducted for the Site:

- The Red Knot was listed as "Threatened" in Suffolk County coastal towns and may occur within the boundary of the project area

The habitat for the Red Knot is described as coastal beaches and rocky shores, sand and mud flats, and is migratory only. There are no critical habitats within the project area. Tidal flats are located within the Mill Creek and Chelsea Creek. The Red Knot is a migratory bird that summers in the Arctic with Massachusetts as a migratory location. The dewatering project will be intermittent and during the summer months (May through September) while the Red Knot is not typically present. Based on this evaluation, the Red Knot is not likely to be affected by the proposed water discharges or discharge related activities. Therefore, there is likely to be "no effect" on the listed species within the project area.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: May 04, 2017
Consultation Code: 05E1NE00-2017-SLI-1469
Event Code: 05E1NE00-2017-E-02913
Project Name: 1012 Broadway Chelsea

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2017-SLI-1469

Event Code: 05E1NE00-2017-E-02913

Project Name: 1012 Broadway Chelsea

Project Type: DEVELOPMENT

Project Description: Dewatering under RGP

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.403228055472624N71.01886164529081W

Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Birds

NAME	STATUS
Red Knot *(Calidris canutus rufa)*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1864

Critical habitats

There are no critical habitats within your project area.

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)
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
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.
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

[1]Migratory only, scattered along the coast in small numbers

-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.

Updated 02/05/2016

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
November 2010

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

Towns with ACECs within their Boundaries November 2010

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary

TOWN	ACEC
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

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Documentation of the National Historic Preservation Act Eligibility Determination:

As part of this permit, a determination was made as to whether there were any historic properties or places listed on the national register in the path of the discharge or in the vicinity of the construction of treatment systems or BMPs related to the discharge. A search on the Massachusetts Cultural Resource Information System Database showed that the project property came up in the database.

In April 2005, a request for eligibility to include the Suffolk Varnish Co. at 1012-1018 Broadway and 960 Broadway on the National Register of Historic Places was submitted. The buildings were determined to be ineligible for listing on the National Register. Supporting information is included.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Chelsea; Street Name: Broadway; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
CLS.901	Broadway Bridge	Broadway	Chelsea	c 1917
CLS.930	Columbus, Christopher Monument	Broadway	Chelsea	1938
CLS.190	Gardner, Abel House	26-28 Broadway	Chelsea	c 1805
CLS.189		51 Broadway	Chelsea	r 1850
CLS.188		53 Broadway	Chelsea	r 1850
CLS.187		55 Broadway	Chelsea	r 1850
CLS.186		57 Broadway	Chelsea	r 1850
CLS.185		59 Broadway	Chelsea	r 1850
CLS.184		61 Broadway	Chelsea	r 1850
CLS.183		63 Broadway	Chelsea	r 1850
CLS.182		65 Broadway	Chelsea	r 1850
CLS.181		67 Broadway	Chelsea	r 1850
CLS.180		69 Broadway	Chelsea	r 1850
CLS.179		73 Broadway	Chelsea	r 1880
CLS.178		75 Broadway	Chelsea	r 1880
CLS.177		81 Broadway	Chelsea	1912
CLS.336	Bernstein, Anna House	85 Broadway	Chelsea	c 1876
CLS.337	Britt, William B. House	87 Broadway	Chelsea	c 1876
CLS.175	Imperial, The	100 Broadway	Chelsea	c 1890
CLS.176		103 Broadway	Chelsea	c 1870
CLS.338		120 Broadway	Chelsea	
CLS.339		120 Broadway	Chelsea	
CLS.163	Lenox Hotel	160 Broadway	Chelsea	c 1898
CLS.912	Stebbins Fountain	171 Broadway	Chelsea	c 1896
CLS.913	Chelsea Conversation	171 Broadway	Chelsea	c 1978
CLS.931	Crab Bricks	171 Broadway	Chelsea	1977
CLS.932	Pulaski, Gen. Casimir Monument	171 Broadway	Chelsea	1931

Inv. No.	Property Name	Street	Town	Year
CLS.152	Wheeler Building	186 Broadway	Chelsea	c 1874
CLS.154	Stebbins Block	210 Broadway	Chelsea	c 1840
CLS.167	Stebbins Block	218 Broadway	Chelsea	c 1860
CLS.583	Exchange Building	227 Broadway	Chelsea	r 1909
CLS.340		232-236 Broadway	Chelsea	c 1935
CLS.174	Panonia Building	233 Broadway	Chelsea	r 1900
CLS.1	Wesson, Charles Building	251 Broadway	Chelsea	1910
CLS.87		260 Broadway	Chelsea	1912
CLS.3	Chelsea Savings Bank	267 Broadway	Chelsea	1909
CLS.86	Detorres Building	270 Broadway	Chelsea	1911
CLS.4	Bernstein, Fannie Building	275 Broadway	Chelsea	1909
CLS.85	Gould, Jesse - Willis Building	276 Broadway	Chelsea	1910
CLS.5	Bernstein - Lerman Building	279 Broadway	Chelsea	1920
CLS.6	Whittlesey, C. M. Building	287 Broadway	Chelsea	1908
CLS.84		288 Broadway	Chelsea	1909
CLS.83		290 Broadway	Chelsea	1911
CLS.82	Nelson - Dykeman Building	296 Broadway	Chelsea	1908
CLS.7	Bernstein - Lerman Building	297 Broadway	Chelsea	1919
CLS.81	Cushon, F. K. Building	302-306 Broadway	Chelsea	1908
CLS.8	Chelsea Masonic Temple	307 Broadway	Chelsea	1910
CLS.80	Hersom Brothers Building	308-312 Broadway	Chelsea	1908
CLS.9	Currier General Store	313-317 Broadway	Chelsea	1910
CLS.79		320 Broadway	Chelsea	1911
CLS.10	Baer, Hyman D. Building	327 Broadway	Chelsea	c 1908
CLS.11	Baer, Hyman D. Building	331 Broadway	Chelsea	1908
CLS.12	Bernstein, Nathan - Lerman, David Building	339 Broadway	Chelsea	1920
CLS.13	Slosberg, Robert Building	343-349 Broadway	Chelsea	1909
CLS.77	Richmond, Moses Building	350 Broadway	Chelsea	1915
CLS.14	Slade, H. A. Building	351 Broadway	Chelsea	1908
CLS.76		360 Broadway	Chelsea	1915
CLS.15	Executive Building, The	361 Broadway	Chelsea	r 1915
CLS.75		376 Broadway	Chelsea	1964
CLS.74	Emerson, Fred Building	380 Broadway	Chelsea	1908
CLS.73	Mann, A. K. Building	388 Broadway	Chelsea	1909
CLS.72	Drake, Dr. Willard Building	394 Broadway	Chelsea	1908
CLS.71	Slade, George F. Building	396 Broadway	Chelsea	1912
CLS.16	Weinstein, Nathan - Gordon, Morris Building	399 Broadway	Chelsea	1913
CLS.70	Sevinor, R. Building	400 Broadway	Chelsea	1919

Inv. No.	Property Name	Street	Town	Year
CLS.17	Mann, A. K. Building	403 Broadway	Chelsea	1908
CLS.69	Anthony, George Building	404 Broadway	Chelsea	1915
CLS.18	Jones, Robert Building	407 Broadway	Chelsea	1909
CLS.68	Strauss, Henry Building	408 Broadway	Chelsea	1908
CLS.19	Douglass, Ella Building	411 Broadway	Chelsea	1908
CLS.20	Wentworth, Royal General Store	413 Broadway	Chelsea	1910
CLS.21	Wentworth, Henry Building	413 Broadway	Chelsea	1911
CLS.67		416 Broadway	Chelsea	1909
CLS.914	Chelsea Walk	418-420 Broadway	Chelsea	1978
CLS.65		422 Broadway	Chelsea	1908
CLS.64		426 Broadway	Chelsea	1912
CLS.63		434 Broadway	Chelsea	1912
CLS.22	County Savings Bank Building	435 Broadway	Chelsea	1910
CLS.62		440 Broadway	Chelsea	1915
CLS.23	Loud, Julia M. Building	443 Broadway	Chelsea	1909
CLS.25	Broadway National Bank	449 Broadway	Chelsea	1969
CLS.61	Freeman Building	458 Broadway	Chelsea	r 1908
CLS.60	DeDomenico Building	466 Broadway	Chelsea	r 1908
CLS.26	Callahan, N. M. Building	469 Broadway	Chelsea	1922
CLS.27	Wheeler, Herbert - Lawrence, Abbott Building	475 Broadway	Chelsea	1910
CLS.48	DeDomenico, S. Building	478 Broadway	Chelsea	r 1908
CLS.28	Cohen, Julius Apartments	481 Broadway	Chelsea	1910
CLS.36	Chelsea City Hall	500 Broadway	Chelsea	1910
CLS.910	Soldiers and Sailors Monument	501 Broadway	Chelsea	c 1867
CLS.29	Chelsea Public Library	569 Broadway	Chelsea	1910
CLS.30	Eisenberg - Shapiro Building	571 Broadway	Chelsea	1929
CLS.34	Saint Rose Roman Catholic School	580 Broadway	Chelsea	1911
CLS.31	McGlinckey, Elizabeth V. Building	583 Broadway	Chelsea	1911
CLS.32	Klein, Joseph Row House	585 Broadway	Chelsea	1908
CLS.33	Saint Rose Roman Catholic Church	598 Broadway	Chelsea	1866
CLS.1003	Chelsea Engine #3 Fire Station	883 Broadway	Chelsea	1887
CLS.630	Chelsea Wire Fabric Rubber Factory	960 Broadway	Chelsea	c 1890
CLS.631	United Indigo and Chemical Company Brick Addition	960 Broadway	Chelsea	r 1915
CLS.632	American Finish and Chemical Company Shed	960 Broadway	Chelsea	c 1970
CLS.636	American Finish and Chemical Office	1010 Broadway	Chelsea	1964
CLS.633	Suffolk Varnish Factory - North Building	1016 Broadway	Chelsea	c 1910
CLS.634	Raffi-Swanson Lacquer Factory - South Building	1016 Broadway	Chelsea	c 1928

Inv. No.	Property Name	Street	Town	Year
CLS.635	American Finish and Chemical Sheds	1016 Broadway	Chelsea	r 1965
CLS.584	Boston Naval Hospital - Quarters A	50 Commandants Way	Chelsea	c 1856

Massachusetts Cultural Resource Information System

Scanned Record Cover Page

Inventory No:	CLS.H
Historic Name:	Upper Broadway Industrial Area
Common Name:	
Address:	
City/Town:	Chelsea
Village/Neighborhood:	
Local No:	
Year Constructed:	
Architect(s):	
Architectural Style(s):	
Use(s):	Industrial Complex or District
Significance:	Architecture; Industry
Area(s):	
Designation(s):	
Building Materials(s):	

The Massachusetts Historical Commission (MHC) has converted this paper record to digital format as part of ongoing projects to scan records of the Inventory of Historic Assets of the Commonwealth and National Register of Historic Places nominations for Massachusetts. Efforts are ongoing and not all inventory or National Register records related to this resource may be available in digital format at this time.

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Commonwealth of Massachusetts
Massachusetts Historical Commission
220 Morrissey Boulevard, Boston, Massachusetts 02125
www.sec.state.ma.us/mhc

This file was accessed on: Wednesday, January 25, 2017 at 12:55 PM

CLS. H

FORM A - AREA

MASSACHUSETTS HISTORICAL COMMISSION
MASSACHUSETTS ARCHIVES BUILDING
220 MORRISSEY BOULEVARD
BOSTON, MASSACHUSETTS 02125

P1
960 Broadway
CLS.630

Assessor's Sheets	USGS Quad	Area Letter	Form No.s in Area
	Bos. N	H	630-636

Town CHELSEA

Place *(neighborhood or village)* Chelsea

Name of Area Upper Broadway

Present Use Industrial/office/storage/retail

Construction Dates or Period 1890 through 20th century

Overall Condition Mainly good. Tanks that contained solvents have been removed from the yard at 1012 Broadway.

Major Intrusions and Alterations Modern addition to 960 Broadway; alteration to façade of Suffolk Varnish Co. north building. Several modern structures have been added to the Suffolk Varnish Co. site, but these do not disturb the historic character of the site.

Acreage 960 Broadway, 20,000 sq. ft.
1012 Broadway, 63,000 sq. ft.

Recorded by Sara E. Wermiel

Organization Preservation consultant for MHC

Date *(month/year)* June – August 2000

RECEIVED
SEP 08 2000
MASS. HIST. COMM

Massachusetts Historical Commission
Massachusetts Archives Building
220 Morrissey Blvd.
Boston, MA 02125

Community: Chelsea
Area Letter: H

Area: Upper Broadway Area
Form No.s in area: see area data sheet

AREA FORM

ARCHITECTURAL DESCRIPTION *continued on next page*

The Upper Broadway area, near the Mill River, was an early site for industry in Chelsea. In 1889, a number of businesses operated on or near Broadway, between Stockton Street and the river, the larger ones being O. S. Foster's brick works; J. G. & J. F. Low's Art Tile Works; and Walker Brothers' Dye House (1889 SM). These large firms closed and their sites were redeveloped. The industrial plants that remain today were constructed in the late 19th and early 20th centuries: the former factories of Chelsea Wire Fabric Rubber Co. at 960 Broadway and the Suffolk Varnish Company at 1012 Broadway. Today, American Finish & Chemical Company (AFCO) owns both sites. The area was not in the path of the Chelsea fire of April 1908 and one structure in the group predates the fire.

The original Chelsea Wire Fabric Rubber Co. factory, at 960 Broadway (MHC 630, c. 1890/after 1954), probably dates from the founding of that company, around 1890 (1 on the sketch map). Located on the south side of Cabot Street at Broadway, this two-story building, measuring about 40 x 135 feet, has a brick foundation, brick bearing walls, a shallow-pitch roof, and timber internal frame (wood posts and beams, and wood column caps). Its window openings are spanned on top by segmental arches (two rows of header brick) and have stone sills. On the Broadway façade, horizontal bands of projecting brick surround the windows – a detail that is found on the façades of commercial buildings of the time; the cornice is corbel brick. The surviving window frames indicate the building had wooden, double hung frames. Attached to its sought wall, at the back of the building, is a two-story brick ell with a shallow-pitched roof and segmental arch windows. Built at the same time as the factory, it housed the steam engine and boilers that provided power and heat to the factory. On the western end (rear) of the building, towards Clark Avenue, is a loading platform. Many windows on the Broadway and Cabot Street sides (those located in the manufacturing part of the building) have been blocked up; others, in the office/laboratory part, have been replaced.

Behind the main building, at the corner of Cabot and Clark Avenue, is a one-story brick addition, 960 Broadway (MHC 631, c. 1915), put up between 1911 and probably 1920 (1911 and 1950 SM, 2 on the sketch map). The only windows on the building are small ones along the top of the walls; the openings are spanned with segmental arches and have stone sills. The building has a timber internal frame and a flat roof.

In the second half of the 20th century, a one-story, wood-clad shed, 960 Broadway (MHC 632, after 1954) with a metal frame was attached to the south wall of the factory, against the east wall of the boiler house (3 on the sketch map). This is the only modern addition to the plant, which is otherwise historically intact and maintained, and can be considered in good condition.

☐ Recommended for listing in the National Register of Historic Places. *If checked, you must attach a completed National Register Criteria Statement form.*

CLS.H

Architectural Description continued

The former site of the Suffolk Varnish Co. at 1012 Broadway includes a collection of buildings and additions dating from about 1910 to the second half of the twentieth century. Probably the only building remaining from the early varnish works is the Suffolk Varnish Co. north building, 1012 Broadway (MHC 633, c. 1910). This one-story brick structure, roughly 25' wide x 40' long, has a brick foundation, shallow-pitched roof behind a parapet, and timber internal frame (A on sketch map). Its façade along Broadway was rebuilt and new window openings inserted; this alteration is evident from inside the building, where a girder that runs down the length of the building is supported at the Broadway wall by a steel lintel over one of the new windows. The top of the façade is stepped and the window openings were made rectangular, with steel lintels filled with concrete blocks, and concrete sills. Probably it was rebuilt around 1928 to match a new building that went up at the time south of it. The windows along the top of the south wall are original: these are small openings with segmental arch tops (2 rows of header bricks). With these alterations, the building is in fair condition.

Across a passage, to the south, stands a group of attached south buildings, 1012 Broadway (MHC 634, c. 1928) in the shape of an "L" that create a courtyard behind the Suffolk Varnish Co. north building, 1012 Broadway (MHC 634, c. 1912). The three principal buildings of the group were erected around the same time and are structurally similar, so will be treated as one structure. These buildings were all designed with attention to their fire resistance and therefore contain no wood. All are one-story, with brick or concrete foundations, brick walls, and flat roofs. The first building, fronting on Broadway, measures about 30 feet wide by 44 feet long and dates from around 1928 (1954 SM, B on the sketch map). The top of the Broadway façade is stepped, with concrete coping, and decorated with a pattern in the brickwork (a row of soldier bricks and one of header bricks). On the inside, the frame is made of metal pole columns (Lally-type) and steel beams protected with concrete; the floor and roof are concrete. The rectangular window openings have soldier brick lintels and header brick sills; frames are metal and have wire-glass glazing. Some windows are covered up. Behind the building, at the north end of the rear wall, stands the remnant of a chimney.

Two wings extend from the rear, forming an "L" behind this building. First in line is a section with brick walls and reinforced concrete beams and roof, measuring about 18 feet wide and 37 feet long (C on sketch map). The third section, perpendicular to C, is about 31 feet wide and 66 feet long (D on sketch map). It has brick walls and a stepped parapet. This wing is framed like B, with metal pipe columns and steel beams, and has a tile firewall that divides it into two rooms. Its eastern (courtyard) wall has wide windows, with soldier brick lintels, concrete sills, and metal frames; there is also a door and loading platform on this side. Since production in this building had involved volatile chemicals, the structure was made "explosion-proof," indicated by the firewall, special light fixtures inside that enclose the light bulbs, and wire-glass glazing. Attached to the rear of this building are four small sheds: two of brick, one of wood, and one with a concrete block base and corrugated metal walls. The three principal buildings (apart from the sheds) are in good condition.

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Architectural Description continued

On the west end of the site are storage sheds, 1012 Broadway (MHC 635, after 1950/1981), which are attached and will be treated as one structure (E on the sketch map). Three have corrugated metal walls and pitched roofs covered with corrugated metal. These were built after 1950 (1950 SM). At the western end of these is a one-story concrete block shed with a steel truss roof covered with metal, which was built in 1981. The sheds are in good condition.

On the north side of the site, across the yard from B-E, are two relatively recent buildings. One is a modern office building, 1012 Broadway (MHC 636, 1964). It is a one-story concrete block building, 28 x 66 feet, erected in 1964 (F on the sketch map). It has square window openings and metal window frames, and is in good condition. Between this building and Broadway, along the north wall of the Suffolk Varnish Co. north building 1012 Broadway (MHC 633, c. 1910) is a former Texaco filling station: a one-story concrete block structure that now is clad with wood panels (G on the sketch map).

HISTORICAL NARRATIVE *continued on next page*

Although not in the railroad corridor, the Upper Broadway Area, near the Mill River, was an early site for industry in Chelsea. The former Chelsea Wire Fabric Rubber Co. factory, 960 Broadway (MHC 630, c. 1890/after 1954) was built at the northern end of a block where J. G. and J. F. Low operated a large and well-regarded art tile works. This site, at the corner of Cabot Street, was undeveloped in 1889 (1889 SM).

Chelsea Wire Fabric Rubber Co. was one of several Chelsea textile companies founded by Thomas Martin. Martin came to the United States in the early 1860s from Leicester, England, then the center of the British elastic fabrics industry. He and brother William worked as superintendents for the Boston Elastic Fabric Company in Chelsea from 1865 to 1874, at which point they left to form their own firm, Thomas Martin & Brother Elastic Web. They built a plant at Dudley and Webster Streets [see Webster-Spencer Avenues Area (MHC I)], the first of a string of specialized fabric companies. In 1890, Martin founded the Chelsea Wire Fabric Rubber Co. and built the two-story, steam-powered factory, at 960 Broadway (MHC 630, c. 1890/after 1954), a few blocks north of the brothers' Dudley Street plant. The new firm produced wire-embedded rubber goods for industry, such as belting and hose. Alfred Fitz, son of a former Chelsea mayor and Thomas Martin's son-in-law, served as the firm's treasurer and general manager.

The company was not a success, however, and soon departed. From about 1910 until around 1950, United Indigo & Chemical Co., a manufacturer of laundry dyes and bleaches, occupied the property (1950 SM). This firm put up the brick addition, 960 Broadway (MHC 631, c. 1915) at the rear of the building, along Cabot Street, which it used for storage. By 1954, United Indigo had departed and other tenants moved in, including a metal working company, which occupied the brick addition (1954 SM). In the early 1970s, American Finish & Chemical Company (AFCO) purchased the property for its textile adhesives division. This firm added the

Historical Narrative continued

wood-clad shed, 960 Broadway (MHC 632, after 1954) to the south wall of the factory. Today the plant houses a laboratory and factory for making "waterborne" adhesives for flocked fabrics.

When AFCO bought the buildings at 960 Broadway, it already owned a plant just up the street on the banks of the Mill River, the former site of Suffolk Varnish Company at 1012 Broadway. The history of varnish making on the site begins in the late 1880s when a carriage maker from Revere, Thomas P. Somes, established a small varnish plant there. In 1908, the firm was called Suffolk Vanish Company. The owners increased the size of the site by filling land along the riverbank and it added new buildings, including the extant Suffolk Varnish Co., north building, 1012 Broadway (MHC 633, c. 1910) (1911 SM). In 1912, the company, still associated with Somes and manufacturing varnishes and Japans, was called Globe Varnish Company. In the next two decades, the works went through several owners. About 1928, Charles Raffi of Somerville and Martin Swanson of Winthrop purchased it and manufactured industrial lacquers and laundry supplies there. Raffi and Swanson constructed the south buildings, 1012 Broadway (MHC 634, c. 1928).

In 1937, Raffi and Swanson sold the plant to Davis Chemical Company.[1] Originally called Chemical Supply Company, Davis Chemical was founded in 1932 in Boston by a pharmacist, Solomon Pinstein. Pinstein had developed a leather treatment product for the shoe industry: it greatly reduced the time required to soften shoe soles prior to their being assembled to uppers. After a brief stay in Lynn, Chemical Supply Co. relocated to Chelsea, where it took over Raffi and Swanson's plant and adopted the name Davis Chemical Company. In 1938, American Finish & Chemical Company (AFCO) was incorporated and absorbed Davis Chemical. From its original products – e.g., sole-treating oils, adhesives, cleaners, and finishes for shoe manufactures – the firm diversified into latex adhesives. AFCO, too, filled in the Mill River and built structures on the new land. AFCO erected the office building, 1012 Broadway (MHC 636, 1964) and the storage sheds, 1012 Broadway (MHC 635, after 1950/1981). In the early 1960s, AFCO began to make textile adhesives, and in the following decade, it purchased the former Chelsea Wire Fabric Rubber Co. factory, 960 Broadway (MHC 630, c. 1890/after 1954) for this work. In 1990, AFCO sold its shoe products division to Worthen Industries of Nashua, New Hampshire. The buildings at 1012 Broadway are now used only for storage and offices. The buildings at 960 Broadway are used to manufacture adhesives.

BIBLIOGRAPHY and/or REFERENCES

Fire insurance maps for Chelsea, Massachusetts, made by the Sanborn Map Company, for 1889, 1894, 1911,1950, 1964, and 1985 (available at the Massachusetts State Library).

Interview with Leon Pinstein, AFCO's owner, June 29, 2000.

Stott, Peter, "Revere Rubber Company;" "Thomas Martin & Brother Elastic Web Factory/Everlastik, Inc.;" "Chelsea Wire Fabric Company/United Indigo & Chemical

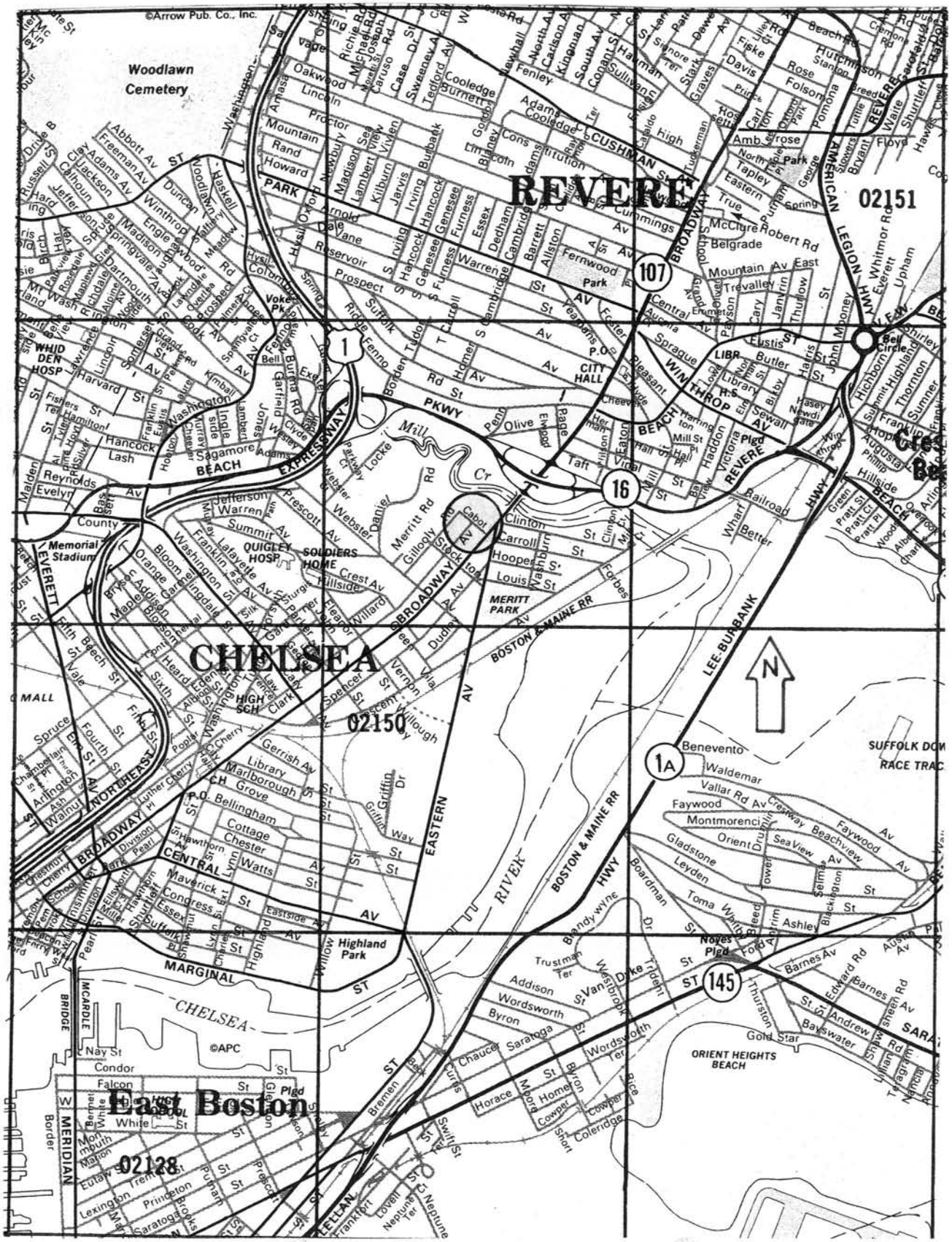
[1] Raffi & Swanson Inc. had a large lacquer factory on Crescent Avenue at Eastern Avenue in 1950 (1950 SM).

Company;" and "Globe Varnish Company/American Finish & Chemical Company;" in "A Guide to the Industrial Archeology of Massachusetts: Middlesex, Norfolk, and Suffolk Counties, 1983" (ms. on file at MHC) and notes for American Finish & Chemical Company in Chelsea ms. file at MHC and transcript of article from Chelsea Record Feb. 1, 1955.

Abbreviation Used in the Text: SM – Sanborn Map Company

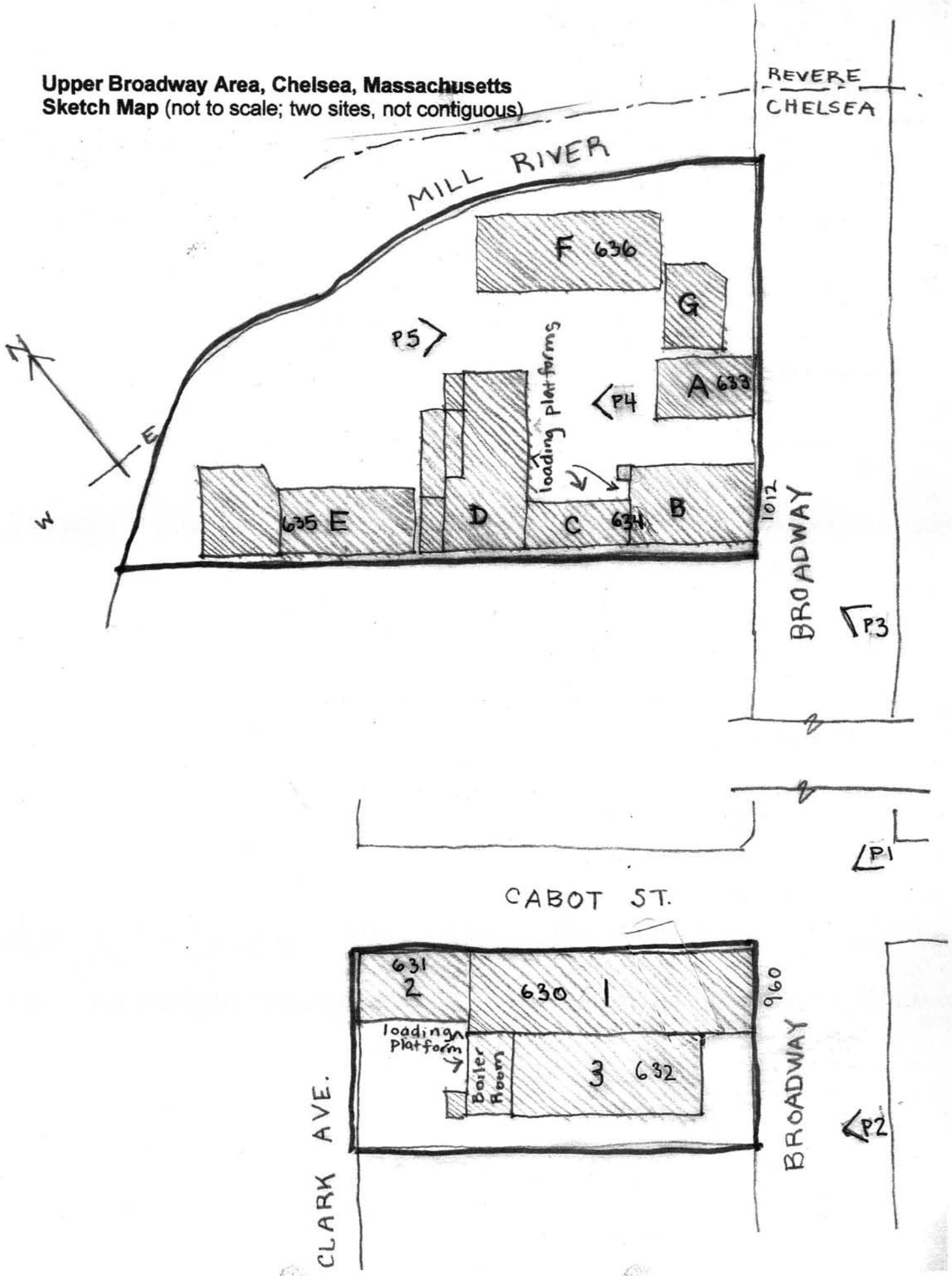
CLS.H

Upper Broadway Area, Chelsea, Massachusetts
Location Map



CLS.H

Upper Broadway Area, Chelsea, Massachusetts
Sketch Map (not to scale; two sites, not contiguous)



Massachusetts Historical Commission
Massachusetts Archives Building
220 Morrissey Blvd.
Boston, MA 02125

Community: Chelsea
Area Letter: H

Area: Upper Broadway Area
Form No.s in area: see area data sheet

Area Data Sheet

MHC #	Resource Name	Street Address	Construction Dates	Building Form	Photo
630	Chelsea Wire Fabric Rubber Co. factory	960 Broadway	c. 1890/after 1954	O	P1, P2
631	brick addition	960 Broadway	c. 1915	O	P1
632	wood-clad shed	960 Broadway	After 1954	Wood/metal frame	P2
633	Suffolk Varnish Co., north building	1016 ~~1012~~ Broadway	c. 1910	O	P3
634	south buildings	1016 ~~1012~~ Broadway	c. 1928	FP-SC/RC	P3, P4
635	storage sheds	1016 ~~1012~~ Broadway	After 1950/1981	F-M/CB	
636	office building	1016 ~~1012~~ Broadway	1964	CB	P5

Key to building form codes

CB	Concrete block
F-M	Timber frame with metal cladding
FP-SC	Fireproof – steel frame and concrete floor
O	Ordinary, meaning masonry bearing walls and timber interior
RC	Reinforced concrete

P5

P2

CLS.632

CLS.H

Massachusetts Historical Commission
Massachusetts Archives Building
220 Morrissey Blvd.
Boston, MA 02125

Community: Chelsea
Area Letter: H

Area: Upper Broadway Area
Form No.s in area: see area data sheet

Area Form Continuation Sheet: Photographs

P3

P4

CLS.H

Original yellow form: Eligibility file
Copies: Inventory form
Town file(w/corresp.)
Macris
NR director ____

Community: Chelsea

MHC OPINION: ELIGIBILITY FOR NATIONAL REGISTER

Date Received: 4/6/05 Date Due: 5/6/05 Date Reviewed: 4/20/05

Type: Individual District (Attach map indicating boundaries)

Name: Suffolk Varnish Company Inventory Form: CLS.H

Address: 1012-1018 Broadway

Requested by: Leon Pinstein

Action: Honor ITC Grant (R & C) Other:

Agency: DEP/MEPA Staff in charge of Review: Jeffrey Harris

INDIVIDUAL PROPERTIES

__ Eligible
__ Eligible, also in district
__ Eligible only in district
X Ineligible
__ More information needed

DISTRICTS

__ Eligible
X Ineligible
__ More information needed

CRITERIA: A B C D

LEVEL: Local State National

STATEMENT OF SIGNIFICANCE:

The Smith Varnish Company sits on the site of a varnish company plant that began operations in the late 1880s. The riverbank was infilled to provide room for the north building, constructed in 1910. Its front façade has been altered from its original configuration, and late 20th century additions extend off the back. In 1928, the complex was converted for the manufacture of industrial lacquers and laundry supplies, and three connected buildings were constructed to the south. Late 20th century storage sheds were added behind these structures.

The complex is an architecturally undistinguished and altered complex related to the varnish industry. More significant and intact buildings in Chelsea still remain and better illustrate the development of this important industry in the community. The buildings are not eligible for individual listing in the National Register. The complex at 960 Broadway is too distant from this complex to form a potential district.

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	**7.5**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	640	µg/L		
Arsenic	**104**	µg/L	36	µg/L		
Cadmium	**10.2**	µg/L	8.9	µg/L		
Chromium III	**323**	µg/L	100.0	µg/L		
Chromium VI	**323**	µg/L	50	µg/L		
Copper	242	µg/L	**3.7**	µg/L		
Iron	**5000**	µg/L	---	µg/L		
Lead	160	µg/L	**8.5**	µg/L		
Mercury	**0.739**	µg/L	1.11	µg/L		
Nickel	**1450**	µg/L	8.3	µg/L		
Selenium	**235.8**	µg/L	71	µg/L		
Silver	**35.1**	µg/L	2.2	µg/L		
Zinc	**420**	µg/L	86	µg/L		
Cyanide	178	mg/L	1.0	µg/L	5	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7.97**	mg/L	---			
Phenol	**1,080**	µg/L	300	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**		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	---			

CERTIFICATE OF ANALYSIS

Brian Miller
CDW Consultants, Inc.
40 Speen Street Suite 301
Framingham, MA 01701

RE: Broadway, Chelsea (1412)
ESS Laboratory Work Order Number: 1705112

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:33 pm, May 11, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

TestAmerica Laboratories, Inc. - Burlington, VT	1,4-Dioxane

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

SAMPLE RECEIPT

The following samples were received on May 04, 2017 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the 2010 Remediation General Permit under the National Pollutant Discharge Elimination System (NPDES).

Lab Number	Sample Name	Matrix	Analysis
1705112-01	Influent	Ground Water	1664A, 200.7, 200.9, 245.1, 2540D, 300.0, 350.1, 4500 CN CE, 4500-Cl E, 504.1, 522, 608, 624, 625, 625 SIM, 7196A, ASTM D3695

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

PROJECT NARRATIVE

624 Volatile Organic Compounds
CE70544-BS1 **Blank Spike recovery is above upper control limit (B+).**
Tertiary-butyl Alcohol (163% @ 70-130%)
CE70544-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Tertiary-butyl Alcohol (136% @ 70-130%)

625 Semi-Volatile Organic Compounds
C7E0169-TUN1 **Pentachlorophenol tailing factor > 2.**

625(SIM) Semi-Volatile Organic Compounds
1705112-01 **Surrogate recovery(ies) below lower control limit (S-).**
p-Terphenyl-d14 (23% @ 30-130%)

Classical Chemistry
1705112-01 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

Total Metals
1705112-01 **Elevated Method Reporting Limits due to sample matrix (EL).**
Cadmium , Silver

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.0)		200.9		5	KJK	05/11/17 0:35	50	10	CE70428
Arsenic	**2.4** (2.0)		200.9		1	KJK	05/10/17 22:00	50	10	CE70428
Cadmium	**EL** ND (2.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Chromium	**18.6** (8.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Chromium III	ND (10.0)		200.7		2	JLK	05/05/17 15:39	1	1	[CALC]
Copper	**18.5** (4.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Hardness	**675000** (529)		200.7		2	KJK	05/05/17 15:39	1	1	[CALC]
Iron	**499** (40.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Lead	**10.8** (8.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Mercury	ND (0.20)		245.1		1	MJV	05/05/17 14:25	20	40	CE70430
Nickel	ND (4.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Selenium	ND (4.0)		200.9		5	KJK	05/11/17 4:36	50	10	CE70428
Silver	**EL** ND (2.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428
Zinc	ND (20.0)		200.7		2	KJK	05/05/17 15:39	50	10	CE70428

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: SMR
Prepared: 5/4/17 15:25

608 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1221	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1232	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1242	**4.02** (0.47)		608		5	05/07/17 3:38		CE70403
Aroclor 1248	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1254	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1260	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1262	ND (0.09)		608		1	05/05/17 4:08		CE70403
Aroclor 1268	ND (0.09)		608		1	05/05/17 4:08		CE70403

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

624 Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	**738** (20.0)		624		20	05/06/17 15:57	C7E0118	CE70544
1,1,2-Trichloroethane	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
1,1-Dichloroethane	**385** (20.0)		624		20	05/06/17 15:57	C7E0118	CE70544
1,1-Dichloroethene	**1.7** (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
1,2-Dichlorobenzene	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
1,2-Dichloroethane	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
1,3-Dichlorobenzene	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
1,4-Dichlorobenzene	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Acetone	ND (10.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Benzene	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Carbon Tetrachloride	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
cis-1,2-Dichloroethene	**1.5** (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Ethylbenzene	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Methyl tert-Butyl Ether	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Methylene Chloride	**3.3** (2.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Naphthalene	**76.0** (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Tertiary-amyl methyl ether	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Tertiary-butyl Alcohol	ND (25.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Tetrachloroethene	**2.3** (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Toluene	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Trichloroethene	**4.6** (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Vinyl Chloride	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Xylene O	ND (1.0)		624		1	05/06/17 7:06	C7E0118	CE70544
Xylene P,M	ND (2.0)		624		1	05/06/17 7:06	C7E0118	CE70544

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*99 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*104 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*105 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 5/4/17 19:00

625(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Acenaphthene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Acenaphthylene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Anthracene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Benzo(a)anthracene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Benzo(a)pyrene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Benzo(b)fluoranthene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Benzo(g,h,i)perylene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Benzo(k)fluoranthene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
bis(2-Ethylhexyl)phthalate	ND (2.34)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Butylbenzylphthalate	ND (2.34)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Chrysene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Dibenzo(a,h)Anthracene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Diethylphthalate	ND (2.34)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Dimethylphthalate	ND (2.34)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Di-n-butylphthalate	ND (2.34)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Di-n-octylphthalate	ND (2.34)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Fluoranthene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Fluorene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Indeno(1,2,3-cd)Pyrene	ND (0.05)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Pentachlorophenol	ND (0.84)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Phenanthrene	ND (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427
Pyrene	**0.21** (0.19)		625 SIM		1	05/06/17 1:52	C7E0108	CE70427

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*43 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*55 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*46 %*		*30-130*
Surrogate: Nitrobenzene-d5	*61 %*		*30-130*
Surrogate: p-Terphenyl-d14	*23 %*	*S-*	*30-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: TJ
Prepared: 5/4/17 19:00

625 Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Phenol	ND (9.3)		625		1	05/10/17 19:12	C7E0169	CE70427

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*82 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: 2-Fluorophenol	*76 %*		*15-110*
Surrogate: Nitrobenzene-d5	*74 %*		*30-130*
Surrogate: Phenol-d6	*81 %*		*15-110*
Surrogate: p-Terphenyl-d14	*34 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Ammonia as N	**2.01** (0.10)		350.1		1	EEM	05/05/17 15:19	mg/L	CE70401
Chloride	**1380** (500)		300.0		1000	EEM	05/05/17 15:11	mg/L	CE70520
Hexavalent Chromium	**26** (10)		7196A		1	JLK	05/04/17 15:05	ug/L	CE70458
Total Cyanide (LL)	**6.84** (5.00)		4500 CN CE		1	EEM	05/05/17 12:25	ug/L	CE70524
Total Petroleum Hydrocarbon	ND (5)		1664A		1	CRR	05/09/17 16:29	mg/L	CE70508
Total Residual Chlorine	ND (10)		4500-Cl E		1	JLK	05/04/17 15:30	ug/L	CE70436
Total Suspended Solids	**12** (5)		2540D		1	EEM	05/05/17 18:10	mg/L	CE70522

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 25
Final Volume: 25
Extraction Method: General Subbed Prep

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: SUB
Prepared: 5/9/17 8:47

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	SV Sequence	FV	Batch
1,4-Dioxane	**32.0** (0.50)		522		1	SUB	05/09/17 8:47	25	25	CE71101

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: JXS
Prepared: 5/10/17 9:30

504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2-Dibromoethane	ND (0.015)		504.1		1	05/10/17 9:47		CE71001

	%Recovery	Qualifier	Limits
Surrogate: Pentachloroethane	*108 %*		*30-150*
Surrogate: Pentachloroethane [2C]	*107 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea
Client Sample ID: Influent
Date Sampled: 05/03/17 15:30
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: No Prep

ESS Laboratory Work Order: 1705112
ESS Laboratory Sample ID: 1705112-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: ZLC
Prepared: 5/8/17 12:16

Alcohol Scan by GC/FID

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Ethanol	ND (5)		ASTM D3695		1	ZLC	05/08/17 14:37		CE70839

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

Quality Control Data

Total Metals

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CE70428 - 3005A/200.7										
Blank										
Antimony	ND	1.0	ug/L							
Arsenic	ND	1.0	ug/L							
Calcium	ND	40	ug/L							
Chromium	ND	4.0	ug/L							
Chromium III	ND	4.0	ug/L							
Copper	ND	2.0	ug/L							
Hardness	ND	265	ug/L							
Iron	ND	20.0	ug/L							
Lead	ND	0.4	ug/L							
Magnesium	ND	40	ug/L							
Nickel	ND	2.0	ug/L							
Selenium	ND	0.8	ug/L							
Silver	ND	1.0	ug/L							
Zinc	ND	10.0	ug/L							
LCS										
Antimony	107	25.0	ug/L	100.0		107	80-120			
Arsenic	104	25.0	ug/L	100.0		104	80-120			
Calcium	1010	40	ug/L	1000		101	85-115			
Chromium	100	4.0	ug/L	100.0		100	80-120			
Chromium III	100	4.0	ug/L							
Copper	101	2.0	ug/L	100.0		101	80-120			
Hardness	6530	265	ug/L							
Iron	569	20.0	ug/L	500.0		114	80-120			
Lead	120	10.0	ug/L	100.0		120	80-120			
Magnesium	975	40	ug/L	1000		97	85-115			
Nickel	98.2	2.0	ug/L	100.0		98	80-120			
Selenium	197	20.0	ug/L	200.0		98	80-120			
Silver	49.9	1.0	ug/L	50.00		100	80-120			
Zinc	92.9	10.0	ug/L	100.0		93	80-120			
LCS Dup										
Antimony	109	25.0	ug/L	100.0		109	80-120	2	20	
Arsenic	109	25.0	ug/L	100.0		109	80-120	5	20	
Calcium	967	40	ug/L	1000		97	85-115	4	20	
Chromium	97.2	4.0	ug/L	100.0		97	80-120	3	20	
Chromium III	97.2	4.0	ug/L							
Copper	96.5	2.0	ug/L	100.0		96	80-120	5	20	
Hardness	6310	265	ug/L							
Iron	539	20.0	ug/L	500.0		108	80-120	5	20	
Lead	112	10.0	ug/L	100.0		112	80-120	7	20	
Magnesium	945	40	ug/L	1000		94	85-115	3	20	
Nickel	93.9	2.0	ug/L	100.0		94	80-120	5	20	
Selenium	209	20.0	ug/L	200.0		104	80-120	6	20	
Silver	47.9	1.0	ug/L	50.00		96	80-120	4	20	
Zinc	89.5	10.0	ug/L	100.0		90	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CE70430 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	6.20	0.20	ug/L	6.000		103	85-115			
LCS Dup										
Mercury	6.16	0.20	ug/L	6.000		103	85-115	0.8	20	
Batch CE70458 - [CALC]										
Blank										
Chromium III	ND	10.0	ug/L							
LCS										
Chromium III	ND		ug/L							
LCS Dup										
Chromium III	ND		ug/L							
608 Polychlorinated Biphenyls (PCB)										
Batch CE70403 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0364*		ug/L	*0.05000*		*73*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0385*		ug/L	*0.05000*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0264*		ug/L	*0.05000*		*53*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0292*		ug/L	*0.05000*		*58*	*30-150*			
LCS										
Aroclor 1016	0.82	0.10	ug/L	1.000		82	40-140			
Aroclor 1260	0.87	0.10	ug/L	1.000		87	40-140			
Surrogate: Decachlorobiphenyl	*0.0411*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0431*		ug/L	*0.05000*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0324*		ug/L	*0.05000*		*65*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0331*		ug/L	*0.05000*		*66*	*30-150*			
LCS Dup										
Aroclor 1016	0.83	0.10	ug/L	1.000		83	40-140	1	50	
Aroclor 1260	0.85	0.10	ug/L	1.000		85	40-140	2	50	
Surrogate: Decachlorobiphenyl	*0.0388*		ug/L	*0.05000*		*78*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
608 Polychlorinated Biphenyls (PCB)										
Batch CE70403 - 3510C										
Surrogate: Decachlorobiphenyl [2C]	*0.0411*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0332*		ug/L	*0.05000*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0337*		ug/L	*0.05000*		*67*	*30-150*			
624 Volatile Organic Compounds										
Batch CE70544 - 5030B										
Blank										
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	2.0	ug/L							
Naphthalene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tertiary-butyl Alcohol	ND	25.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*25.6*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.8*		ug/L	*25.00*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*25.3*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Toluene-d8	*26.5*		ug/L	*25.00*		*106*	*70-130*			
LCS										
1,1,1-Trichloroethane	10.8		ug/L	10.00		108	70-130			
1,1,2-Trichloroethane	11.4		ug/L	10.00		114	70-130			
1,1-Dichloroethane	11.0		ug/L	10.00		110	70-130			
1,1-Dichloroethene	11.0		ug/L	10.00		110	70-130			
1,2-Dichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,2-Dichloroethane	11.4		ug/L	10.00		114	70-130			
1,3-Dichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,4-Dichlorobenzene	11.1		ug/L	10.00		111	70-130			

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Client Name: CDW Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
624 Volatile Organic Compounds										
Batch CE70544 - 5030B										
Acetone	56.4		ug/L	50.00		113	70-130			
Benzene	10.6		ug/L	10.00		106	70-130			
Carbon Tetrachloride	11.3		ug/L	10.00		113	70-130			
cis-1,2-Dichloroethene	11.6		ug/L	10.00		116	70-130			
Ethylbenzene	10.6		ug/L	10.00		106	70-130			
Methyl tert-Butyl Ether	10.7		ug/L	10.00		107	70-130			
Methylene Chloride	10.4		ug/L	10.00		104	70-130			
Naphthalene	11.3		ug/L	10.00		113	70-130			
Tertiary-amyl methyl ether	10.6		ug/L	10.00		106	70-130			
Tertiary-butyl Alcohol	81.5		ug/L	50.00		163	70-130			B+
Tetrachloroethene	8.9		ug/L	10.00		89	70-130			
Toluene	10.7		ug/L	10.00		107	70-130			
Trichloroethene	10.4		ug/L	10.00		104	70-130			
Vinyl Chloride	9.9		ug/L	10.00		99	70-130			
Xylene O	11.0		ug/L	10.00		110	70-130			
Xylene P,M	21.8		ug/L	20.00		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	*27.8*		ug/L	*25.00*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.6*		ug/L	*25.00*		*106*	*70-130*			
Surrogate: Dibromofluoromethane	*26.6*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*27.0*		ug/L	*25.00*		*108*	*70-130*			
LCS Dup										
1,1,1-Trichloroethane	11.2		ug/L	10.00		112	70-130	4	25	
1,1,2-Trichloroethane	10.4		ug/L	10.00		104	70-130	9	25	
1,1-Dichloroethane	10.8		ug/L	10.00		108	70-130	1	25	
1,1-Dichloroethene	11.6		ug/L	10.00		116	70-130	4	25	
1,2-Dichlorobenzene	10.9		ug/L	10.00		109	70-130	3	25	
1,2-Dichloroethane	10.7		ug/L	10.00		107	70-130	6	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	3	25	
1,4-Dichlorobenzene	10.5		ug/L	10.00		105	70-130	6	25	
Acetone	51.3		ug/L	50.00		103	70-130	10	25	
Benzene	10.8		ug/L	10.00		108	70-130	2	25	
Carbon Tetrachloride	10.8		ug/L	10.00		108	70-130	4	25	
cis-1,2-Dichloroethene	11.8		ug/L	10.00		118	70-130	2	25	
Ethylbenzene	11.0		ug/L	10.00		110	70-130	4	25	
Methyl tert-Butyl Ether	10.4		ug/L	10.00		104	70-130	3	25	
Methylene Chloride	10.7		ug/L	10.00		107	70-130	3	25	
Naphthalene	11.0		ug/L	10.00		110	70-130	3	25	
Tertiary-amyl methyl ether	10.3		ug/L	10.00		103	70-130	3	25	
Tertiary-butyl Alcohol	67.8		ug/L	50.00		136	70-130	18	25	B+
Tetrachloroethene	8.4		ug/L	10.00		84	70-130	5	25	
Toluene	10.6		ug/L	10.00		106	70-130	1	25	
Trichloroethene	10.7		ug/L	10.00		107	70-130	3	25	
Vinyl Chloride	9.8		ug/L	10.00		98	70-130	1	25	
Xylene O	10.6		ug/L	10.00		106	70-130	5	25	
Xylene P,M	22.0		ug/L	20.00		110	70-130	0.9	25	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
624 Volatile Organic Compounds										
Batch CE70544 - 5030B										
Surrogate: 1,2-Dichloroethane-d4	*27.5*		ug/L	*25.00*		*110*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.2*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*27.1*		ug/L	*25.00*		*109*	*70-130*			
Surrogate: Toluene-d8	*28.0*		ug/L	*25.00*		*112*	*70-130*			
625(SIM) Semi-Volatile Organic Compounds										
Batch CE70427 - 3520C										
Blank										
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
bis(2-Ethylhexyl)phthalate	15.7	2.50	ug/L							
Butylbenzylphthalate	ND	2.50	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Diethylphthalate	ND	2.50	ug/L							
Dimethylphthalate	ND	2.50	ug/L							
Di-n-butylphthalate	ND	2.50	ug/L							
Di-n-octylphthalate	ND	2.50	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Pentachlorophenol	ND	0.90	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*44.3*		ug/L	*100.0*		*44*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*85.0*		ug/L	*150.0*		*57*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*46.8*		ug/L	*100.0*		*47*	*30-130*			
Surrogate: Nitrobenzene-d5	*63.4*		ug/L	*100.0*		*63*	*30-130*			
Surrogate: p-Terphenyl-d14	*44.3*		ug/L	*100.0*		*44*	*30-130*			
LCS										
Acenaphthene	90.9	4.00	ug/L	100.0		91	40-140			
Acenaphthylene	84.8	4.00	ug/L	100.0		85	40-140			
Anthracene	88.1	4.00	ug/L	100.0		88	40-140			
Benzo(a)anthracene	80.4	1.00	ug/L	100.0		80	40-140			
Benzo(a)pyrene	92.7	1.00	ug/L	100.0		93	40-140			
Benzo(b)fluoranthene	91.0	1.00	ug/L	100.0		91	40-140			
Benzo(g,h,i)perylene	84.9	4.00	ug/L	100.0		85	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
625(SIM) Semi-Volatile Organic Compounds										
Batch CE70427 - 3520C										
Benzo(k)fluoranthene	94.2	1.00	ug/L	100.0		94	40-140			
bis(2-Ethylhexyl)phthalate	101	50.0	ug/L	100.0		101	40-140			
Butylbenzylphthalate	99.3	50.0	ug/L	100.0		99	40-140			
Chrysene	87.6	1.00	ug/L	100.0		88	40-140			
Dibenzo(a,h)Anthracene	92.0	1.00	ug/L	100.0		92	40-140			
Diethylphthalate	91.0	50.0	ug/L	100.0		91	40-140			
Dimethylphthalate	95.4	50.0	ug/L	100.0		95	40-140			
Di-n-butylphthalate	95.0	50.0	ug/L	100.0		95	40-140			
Di-n-octylphthalate	98.8	50.0	ug/L	100.0		99	40-140			
Fluoranthene	93.5	4.00	ug/L	100.0		93	40-140			
Fluorene	95.4	4.00	ug/L	100.0		95	40-140			
Indeno(1,2,3-cd)Pyrene	90.7	1.00	ug/L	100.0		91	40-140			
Naphthalene	75.5	4.00	ug/L	100.0		76	40-140			
Pentachlorophenol	68.1	18.0	ug/L	100.0		68	30-130			
Phenanthrene	83.1	4.00	ug/L	100.0		83	40-140			
Pyrene	91.9	4.00	ug/L	100.0		92	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*87.7*		ug/L	*100.0*		*88*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*152*		ug/L	*150.0*		*101*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*93.9*		ug/L	*100.0*		*94*	*30-130*			
Surrogate: Nitrobenzene-d5	*94.7*		ug/L	*100.0*		*95*	*30-130*			
Surrogate: p-Terphenyl-d14	*93.9*		ug/L	*100.0*		*94*	*30-130*			
LCS Dup										
Acenaphthene	87.9	4.00	ug/L	100.0		88	40-140	3	20	
Acenaphthylene	82.0	4.00	ug/L	100.0		82	40-140	3	20	
Anthracene	84.4	4.00	ug/L	100.0		84	40-140	4	20	
Benzo(a)anthracene	78.5	1.00	ug/L	100.0		78	40-140	2	20	
Benzo(a)pyrene	91.3	1.00	ug/L	100.0		91	40-140	2	20	
Benzo(b)fluoranthene	88.4	1.00	ug/L	100.0		88	40-140	3	20	
Benzo(g,h,i)perylene	82.8	4.00	ug/L	100.0		83	40-140	2	20	
Benzo(k)fluoranthene	97.3	1.00	ug/L	100.0		97	40-140	3	20	
bis(2-Ethylhexyl)phthalate	99.2	50.0	ug/L	100.0		99	40-140	1	20	
Butylbenzylphthalate	98.5	50.0	ug/L	100.0		98	40-140	0.8	20	
Chrysene	84.5	1.00	ug/L	100.0		85	40-140	4	20	
Dibenzo(a,h)Anthracene	90.9	1.00	ug/L	100.0		91	40-140	1	20	
Diethylphthalate	84.2	50.0	ug/L	100.0		84	40-140	8	20	
Dimethylphthalate	89.4	50.0	ug/L	100.0		89	40-140	6	20	
Di-n-butylphthalate	91.1	50.0	ug/L	100.0		91	40-140	4	20	
Di-n-octylphthalate	100	50.0	ug/L	100.0		100	40-140	2	20	
Fluoranthene	89.4	4.00	ug/L	100.0		89	40-140	4	20	
Fluorene	89.3	4.00	ug/L	100.0		89	40-140	7	20	
Indeno(1,2,3-cd)Pyrene	84.5	1.00	ug/L	100.0		84	40-140	7	20	
Naphthalene	73.2	4.00	ug/L	100.0		73	40-140	3	20	
Pentachlorophenol	65.8	18.0	ug/L	100.0		66	30-130	3	20	
Phenanthrene	79.9	4.00	ug/L	100.0		80	40-140	4	20	
Pyrene	91.6	4.00	ug/L	100.0		92	40-140	0.3	20	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
625(SIM) Semi-Volatile Organic Compounds										
Batch CE70427 - 3520C										
Surrogate: 1,2-Dichlorobenzene-d4	*86.2*		ug/L	*100.0*		*86*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*145*		ug/L	*150.0*		*97*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*90.3*		ug/L	*100.0*		*90*	*30-130*			
Surrogate: Nitrobenzene-d5	*89.6*		ug/L	*100.0*		*90*	*30-130*			
Surrogate: p-Terphenyl-d14	*89.7*		ug/L	*100.0*		*90*	*30-130*			
625 Semi-Volatile Organic Compounds										
Batch CE70427 - 3520C										
Blank										
Phenol	ND	10.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*60.8*		ug/L	*100.0*		*61*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*89.0*		ug/L	*150.0*		*59*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*107*		ug/L	*150.0*		*71*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*66.5*		ug/L	*100.0*		*67*	*30-130*			
Surrogate: 2-Fluorophenol	*93.9*		ug/L	*150.0*		*63*	*15-110*			
Surrogate: Nitrobenzene-d5	*67.7*		ug/L	*100.0*		*68*	*30-130*			
Surrogate: Phenol-d6	*108*		ug/L	*150.0*		*72*	*15-110*			
Surrogate: p-Terphenyl-d14	*77.8*		ug/L	*100.0*		*78*	*30-130*			
LCS										
Phenol	61.6	10.0	ug/L	100.0		62	30-130			
Surrogate: 1,2-Dichlorobenzene-d4	*60.2*		ug/L	*100.0*		*60*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*112*		ug/L	*150.0*		*75*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*98.7*		ug/L	*150.0*		*66*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*67.1*		ug/L	*100.0*		*67*	*30-130*			
Surrogate: 2-Fluorophenol	*81.6*		ug/L	*150.0*		*54*	*15-110*			
Surrogate: Nitrobenzene-d5	*66.4*		ug/L	*100.0*		*66*	*30-130*			
Surrogate: Phenol-d6	*102*		ug/L	*150.0*		*68*	*15-110*			
Surrogate: p-Terphenyl-d14	*76.6*		ug/L	*100.0*		*77*	*30-130*			
LCS Dup										
Phenol	68.5	10.0	ug/L	100.0		68	30-130	11	200	
Surrogate: 1,2-Dichlorobenzene-d4	*62.1*		ug/L	*100.0*		*62*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*117*		ug/L	*150.0*		*78*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*110*		ug/L	*150.0*		*74*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*68.5*		ug/L	*100.0*		*68*	*30-130*			
Surrogate: 2-Fluorophenol	*96.4*		ug/L	*150.0*		*64*	*15-110*			
Surrogate: Nitrobenzene-d5	*68.5*		ug/L	*100.0*		*68*	*30-130*			
Surrogate: Phenol-d6	*111*		ug/L	*150.0*		*74*	*15-110*			
Surrogate: p-Terphenyl-d14	*72.4*		ug/L	*100.0*		*72*	*30-130*			
Classical Chemistry										
Batch CE70401 - NH4 Prep										

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE70401 - NH4 Prep										
Blank										
Ammonia as N	ND	0.10	mg/L							
LCS										
Ammonia as N	0.10	0.10	mg/L	0.09994		101	80-120			
LCS										
Ammonia as N	0.98	0.10	mg/L	0.9994		98	80-120			
Batch CE70436 - General Preparation										
Blank										
Total Residual Chlorine	ND	10	ug/L							
LCS										
Total Residual Chlorine	2		mg/L	1.800		100	85-115			
Batch CE70458 - General Preparation										
Blank										
Hexavalent Chromium	ND	10	ug/L							
LCS										
Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110			
LCS Dup										
Hexavalent Chromium	0.5		mg/L	0.4998		100	90-110	0.3	20	
Batch CE70508 - General Preparation										
Blank										
Total Petroleum Hydrocarbon	ND	5	mg/L							
LCS										
Total Petroleum Hydrocarbon	15	5	mg/L	19.38		77	66-114			
Batch CE70520 - General Preparation										
Blank										
Chloride	ND	0.5	mg/L							
LCS										
Chloride	2.5		mg/L	2.500		99	90-110			
Batch CE70522 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	42		mg/L	43.50		97	80-120			
Batch CE70524 - TCN Prep										
Blank										
Total Cyanide (LL)	ND	5.00	ug/L							
LCS										
Total Cyanide (LL)	20.4	5.00	ug/L	20.06		102	90-110			
LCS										
Total Cyanide (LL)	149	5.00	ug/L	150.4		99	90-110			

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE70524 - TCN Prep										
LCS Dup										
Total Cyanide (LL)	148	5.00	ug/L	150.4		98	90-110	0.5	20	
504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane										
Batch CE71001 - 504/8011										
Blank										
1,2-Dibromoethane	ND	0.015	ug/L							
1,2-Dibromoethane [2C]	ND	0.015	ug/L							
Surrogate: Pentachloroethane	*0.229*		ug/L	*0.2000*		*115*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.228*		ug/L	*0.2000*		*114*	*30-150*			
LCS										
1,2-Dibromoethane	0.217	0.015	ug/L	0.2000		108	70-130			
1,2-Dibromoethane [2C]	0.208	0.015	ug/L	0.2000		104	70-130			
Surrogate: Pentachloroethane	*0.195*		ug/L	*0.2000*		*98*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.193*		ug/L	*0.2000*		*96*	*30-150*			
LCS										
1,2-Dibromoethane	0.089	0.015	ug/L	0.08000		111	70-130			
1,2-Dibromoethane [2C]	0.084	0.015	ug/L	0.08000		106	70-130			
Surrogate: Pentachloroethane	*0.0750*		ug/L	*0.08000*		*94*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.0741*		ug/L	*0.08000*		*93*	*30-150*			
Alcohol Scan by GC/FID										
Batch CE70839 - No Prep										
Blank										
Ethanol	ND	10	mg/L							
LCS										
Ethanol	1190	11	mg/L	1111		107	60-140			
LCS Dup										
Ethanol	1130	11	mg/L	1111		102	60-140	5	30	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

Notes and Definitions

U	Analyte included in the analysis, but not detected
S-	Surrogate recovery(ies) below lower control limit (S-).
PT	Pentachlorophenol tailing factor > 2.
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705112

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
Tel: (802)660-1990

TestAmerica Job ID: 200-38489-1
TestAmerica Sample Delivery Group: 200-38489-1
Client Project/Site: ESS 1,4-Dioxane
Revision: 1

For:
ESS Laboratory
185 Frances Ave.
Cranston, Rhode Island 02910

Attn: Michelle Mirenda

Authorized for release by:
5/10/2017 4:38:37 PM

Kathryn Kelly, Project Manager I
(802)660-1990
kathryn.kelly@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

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: 200-38489-1

Laboratory: TestAmerica Burlington

Narrative

CASE NARRATIVE

Client: ESS Laboratory

Project: ESS 1,4-Dioxane

Report Number: 200-38489-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 05/05/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.1 C.

1,4-DIOXANE

Sample 1705112-01 was analyzed for 1,4-Dioxane in accordance with EPA Method 522. The samples were prepared on 05/06/2017 and analyzed on 05/08/2017 and 05/09/2017.

Sample 1705112-01[2.5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Detection Summary

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Client Sample ID: 1705112-01 — Lab Sample ID: 200-38489-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	32		0.50	0.14	ug/L	2.5		522	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Client Sample ID: 1705112-01
Date Collected: 05/03/17 15:30
Date Received: 05/05/17 10:20

Lab Sample ID: 200-38489-1
Matrix: Water

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	32		0.50	0.14	ug/L		05/06/17 13:48	05/09/17 08:47	2.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*93*		*46 - 130*	*05/06/17 13:48*	*05/09/17 08:47*	*2.5*

Surrogate Summary

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Method: 522 - 1,4 Dioxane (GC/MS SIM)

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

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	14DD8 (46-130)								
200-38489-1	1705112-01	93								
LCS 200-116471/2-A	Lab Control Sample	107								
MB 200-116471/1-A	Method Blank	113								

Surrogate Legend

14DD8 = 1,4-Dioxane-d8 (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-116471/1-A
Matrix: Water
Analysis Batch: 116484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116471

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.20	0.057	ug/L		05/06/17 13:48	05/08/17 16:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*113*		*46 - 130*	*05/06/17 13:48*	*05/08/17 16:52*	*1*

Lab Sample ID: LCS 200-116471/2-A
Matrix: Water
Analysis Batch: 116484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116471

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			2.00	2.35		ug/L		117	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8 (Surr)	*107*		*46 - 130*

QC Association Summary

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

GC/MS Semi VOA

Prep Batch: 116471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38489-1	1705112-01	Total/NA	Water	3535A	
MB 200-116471/1-A	Method Blank	Total/NA	Water	3535A	
LCS 200-116471/2-A	Lab Control Sample	Total/NA	Water	3535A	

Analysis Batch: 116484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 200-116471/1-A	Method Blank	Total/NA	Water	522	116471
LCS 200-116471/2-A	Lab Control Sample	Total/NA	Water	522	116471

Analysis Batch: 116517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38489-1	1705112-01	Total/NA	Water	522	116471

Lab Chronicle

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Client Sample ID: 1705112-01
Date Collected: 05/03/17 15:30
Date Received: 05/05/17 10:20

Lab Sample ID: 200-38489-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535A			116471	05/06/17 13:48	ERJ	TAL BUR
Total/NA	Analysis	522		2.5	116517	05/09/17 08:47	TPB	TAL BUR

Laboratory References:

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

Accreditation/Certification Summary

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Laboratory: TestAmerica Burlington

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-17
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-18
Florida	NELAP	4	E87467	06-30-17 *
L-A-B	DoD ELAP		L2336	02-25-20
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-17
New Hampshire	NELAP	1	2006	12-18-17
New Jersey	NELAP	2	VT972	06-30-17 *
New York	NELAP	2	10391	04-01-18
Pennsylvania	NELAP	3	68-00489	04-30-18
Rhode Island	State Program	1	LAO00298	12-30-17
US Fish & Wildlife	Federal		LE-058448-0	10-31-17
USDA	Federal		P330-11-00093	12-05-19
Vermont	State Program	1	VT-4000	12-31-17
Virginia	NELAP	3	460209	12-14-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Method	Method Description	Protocol	Laboratory
522	1,4 Dioxane (GC/MS SIM)	EPA	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: ESS Laboratory
Project/Site: ESS 1,4-Dioxane

TestAmerica Job ID: 200-38489-1
SDG: 200-38489-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-38489-1	1705112-01	Water	05/03/17 15:30	05/05/17 10:20

ESS Laboratory — Test America — CHAIN OF CUSTODY

ESS Lab # 1705112

Division of Thielsch Engineering, Inc.

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

Turn Time ____ Standard Other **DUE 5/9/17**

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other **RGP**

Reporting Limits - _____

Electonic Deliverables **Excel** Access **PDF** *

Co. Name	Project #	Project Name
ESS Laboratory		1705112

Contact Person			
Shawn Morrell			

Address	City , State	Zip	PO #
			B02408

Tel.	email:
ext. 3083	smorrell@thielsch.com

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: 1,4-Dioxane 522
	5/3/17	1530	G	GW	1705112-01	1	2	AG	1L	X
	5/3/17	1600	G	GW	1705112-02	1	2	AG	1L	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes ____No

Seals Intact ✓ Yes ____No NA:____

Cooler Temperature: 2.1°C

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments:

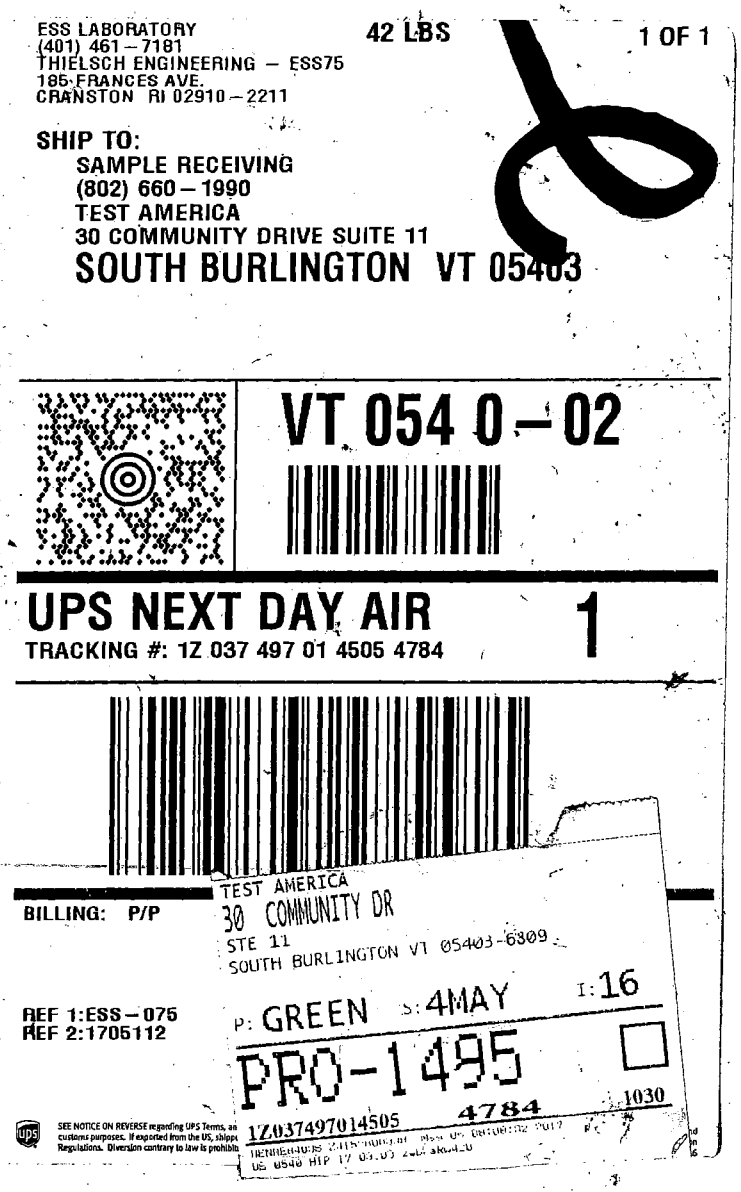
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
5/4/17 1553	UPS		5/05/17@1020
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

200-38489 Chain of Custody



ESS LABORATORY
(401) 461 – 7181
THIELSCH ENGINEERING – ESS75
185 FRANCES AVE.
CRANSTON RI 02910 – 2211

42 LBS

1 OF 1

SHIP TO:
SAMPLE RECEIVING
(802) 660 – 1990
TEST AMERICA
30 COMMUNITY DRIVE SUITE 11
SOUTH BURLINGTON VT 05403

VT 054 0 – 02

UPS NEXT DAY AIR

1

TRACKING #: 1Z 037 497 01 4505 4784

BILLING: P/P

REF 1:ESS – 075
REF 2:1705112

TEST AMERICA
30 COMMUNITY DR
STE 11
SOUTH BURLINGTON VT 05403-6309

P: GREEN S: 4MAY I: 16

PRO-1495

1030

1Z037497014505 4784

SEE NOTICE ON REVERSE regarding UPS Terms, and customs purposes. If exported from the US, shipper Regulations. Diversion contrary to law is prohibited.

Login Sample Receipt Checklist

Client: ESS Laboratory

Job Number: 200-38489-1
SDG Number: 200-38489-1

Login Number: 38489
List Number: 1
Creator: Johnson, Eleanor E

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
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	2.1ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 www.esslaboratory.com

CHAIN OF CUSTODY

ESS LAB PROJECT ID: 1705112

Turn Time _____ Standard Rush _____ Approved By: _____

Reporting Limits -

State where samples were collected: MA NH

Is this project for: **RGP**

Electonic Deliverable Yes____ No____
Format: Excel___ Access___ PDF___ Other_____

Project Manager: B. Miller
Company: CDM Consultants, Inc.
Address: 40 Speen St, Suite 301
Framingham, MA 01701
bmiller@cdmconsultants.com

Project #: 1412
Project Name: Broadway, Chelsea
PO #

ESS Lab Sample ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample Identification	# of Containers	RGP Metals (Total) (Dissolved)	Hardness (Calculation)	Ethanol ASTM D3695	Chloride 300.0*	Total Cyanide 4500 LL	TPH 1664	TSS 2540D*	TRC 4500-CL E*	Ammonia 350.1	Tri Cr (Calc. MUST run T. Cr)	Hex Cr 7196A	RGP VOC Long List 624	1,4-Dioxane 522	EDB 504.1	RGP SVOC Log List 625-SIM	PCB 608	Comment #
1	5/3/17	15:30	G	GW	INFLUENT	20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1,2
Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____							4	4	1	1	5	2	1	1	3	-	1	2	1	2	1	1	
Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA							P	P	V	P	P	AG	P	P	P	-	P	V	AG	V	AG	AG	

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present Y Yes ____No
Seals Intact ____ Yes ____No NA: ____
Cooler Temperature: 0.9+1.4 Iced

Sampled by :

Comments: 1) RGP Metals include Sb, As, Cd, Cu, Fe, Pb, Ni, Se, Ag and Zn by 200.7/200.9 and Hg by 245.1
2) Parameters in **BOLD** have Short hold-time **PERMIT ATTACHED**
* **TSS, TRC and Cl taken from the same container**

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5/3/17	5/4/17 9:54	5/4/17 11:20		5/4/17 1144
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Please E-mail all changes to Chain of Custody in writing.

Page ____ of ____

CERTIFICATE OF ANALYSIS

Brian Miller
CDW Consultants, Inc.
40 Speen Street Suite 301
Framingham, MA 01701

RE: Broadway, Chelsea (1412)
ESS Laboratory Work Order Number: 1705134

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 2:43 pm, May 11, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705134

SAMPLE RECEIPT

The following samples were received on May 04, 2017 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the 2010 Remediation General Permit under the National Pollutant Discharge Elimination System (NPDES).

Lab Number	Sample Name	Matrix	Analysis
1705134-01	River	Surface Water	2520B

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705134

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705134

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705134

Classical Chemistry

Client Sample ID: River
Date Sampled: 05/03/17 15:00
Percent Solids: N/A

ESS Laboratory Sample ID: 1705134-01
Sample Matrix: Surface Water

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Salinity	**3.2**	ppt	0.1	2520B	1	EEM	05/10/17 12:00

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE71022 - General Preparation										
LCS										
Salinity	1.0		ppt	1.000		97	85-115			

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea ESS Laboratory Work Order: 1705134

Notes and Definitions

ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705134

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

1705134

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 www.esslaboratory.com

CHAIN OF CUSTODY

ESS LAB PROJECT ID: 1705112 MS 5/4/17

Turn Time _____ Standard Rush _____ Approved By: _____

Reporting Limits -

State where samples were collected: MA NH

Is this project for: **RGP**

Electonic Deliverable Yes____ No____
Format: Excel___ Access___ PDF___ Other_____

Project Manager: Brian Milly
Company: CDM Consultants, Inc.
Address: 410 Speen St, Suite 301
Framingham, MA 01701
bmilly@cdmconsultants.com

Project #: 1412
Project Name: Broadway Chelsea
PO #:

ESS Lab Sample ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample Identification	# of Containers	Analysis: RGP Metals (Total) (Dissolved)	Hardness (Calculation)	Ethanol ASTM D3695	Chloride 300.0*	Total Cyanide 4500 LL	TPH 1664	TSS 2540D*	TRC 4500-CL E*	Ammonia 350.1 *	Tri Cr (Calc. MUST run T. Cr)	Hex Cr 7196A	RGP VOC Long List 624	1,4-Dioxane 522	EDB 504.1	RGP SVOC Log List 625-SIM	PCB 608	Comment #
3	5/3/17	1500	G	SW	RIVER	20									X								1,2
					*ML - 5/11/17																		

X 5/4/17

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

4	4	1	1	5	2	1	1	3	-	1	2	1	2	1	1		
P	P	V	P	P	AG	P	P	P	-	P	V	AG	V	AG	AG		

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes ____ No

Seals Intact ____ Yes ____ No NA:

Cooler Temperature: 0.9+1.4 Ice

Sampled by :

Comments: 1) RGP Metals include Sb, As, Cd, Cu, Fe, Pb, Ni, Se, Ag and Zn by 200.7/200.9 and Hg by 245.1
2) Parameters in **BOLD** have Short hold-time **PERMIT ATTACHED**
***TSS, TRC and Cl taken from the same container**

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5/3/17	5/4/17 9:54	5/4/17 11:20		5/4/17 1144
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Please E-mail all changes to Chain of Custody in writing.

Page ____ of ____

1705134

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 www.esslaboratory.com

CHAIN OF CUSTODY

ESS LAB PROJECT ID: 1705112-MS 5/4/17

Turn Time _____ Standard Rush _____ Approved By: _____

Reporting Limits -

State where samples were collected: (MA) NH

Is this project for: **RGP**

Electonic Deliverable Yes____ No____
Format: Excel___ Access___ PDF___ Other_____

Project Manager: Brian Milly
Company: CDM Consultants, Inc.
Address: 410 Speen St, Suite 301
Framingham, MA 01701
bmilly@cdmconsultants.com

Project #: 1412
Project Name: Broadway Chelsea
PO #:

ESS Lab Sample ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample Identification	# of Containers	Analysis: RGP Metals (Total) (Dissolved)	Hardness (Calculation)	Ethanol ASTM D3695	Chloride 300.0*	Total Cyanide 4500 LL	TPH 1664	TSS 2540D*	TRC 4500-CL E*	Ammonia 350.1	Tri Cr (Calc. MUST run T. Cr)	Hex Cr 7196A	RGP VOC Long List 624	1,4-Dioxane 522	EDB 504.1	RGP SVOC Log List 625-SIM	PCB 608	Comment #
3	5/3/17	1500	G	SW	RIVER	20									X								1,2

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

4	4	1	1	5	2	1	1	3	-	1	2	1	2	1	1			
P	P	V	P	P	AG	P	P	P	-	P	V	AG	V	AG	AG			

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes _____ No

Seals Intact _____ Yes _____ No NA:

Cooler Temperature: 0.9+1.4 Ice

Sampled by :

Comments: 1) RGP Metals include Sb, As, Cd, Cu, Fe, Pb, Ni, Se, Ag and Zn by 200.7/200.9 and Hg by 245.1
2) Parameters in **BOLD** have Short hold-time **PERMIT ATTACHED**
***TSS, TRC and Cl taken from the same container**

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5/3/17	5/4/17 9:54	5/4/17 11:20		5/4/17 1144
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Please E-mail all changes to Chain of Custody in writing.

Page ____ of ____

CERTIFICATE OF ANALYSIS

Brian Miller
CDW Consultants, Inc.
40 Speen Street Suite 301
Framingham, MA 01701

RE: Broadway, Chelsea (1412)
ESS Laboratory Work Order Number: 1705225

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 11:27 am, May 12, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

SAMPLE RECEIPT

The following samples were received on May 09, 2017 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the 2010 Remediation General Permit under the National Pollutant Discharge Elimination System (NPDES).

Lab Number	Sample Name	Matrix	Analysis
1705225-01	River	Surface Water	350.1

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

Classical Chemistry

Client Sample ID: River
Date Sampled: 05/08/17 13:15
Percent Solids: N/A

ESS Laboratory Sample ID: 1705225-01
Sample Matrix: Surface Water

Analyte	Results	Units	MRL	Method	DF	Analyst	Analyzed
Ammonia as N	**0.11**	mg/L	0.10	350.1	1	EEM	05/10/17 15:18

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CE70905 - NH4 Prep										
Blank										
Ammonia as N	ND	0.10	mg/L							
LCS										
Ammonia as N	0.11	0.10	mg/L	0.09994		110	80-120			
LCS										
Ammonia as N	0.98	0.10	mg/L	0.9994		98	80-120			

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Broadway, Chelsea

ESS Laboratory Work Order: 1705225

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1705225

Turn Time Rush 72 hr.
Regulatory State MA
Is this project for any of the following?: ○CT RCP ○MA MCP ☒RGP

Reporting Limits
Electonic Deliverables: ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →) PDF

Company Name	Project #	Project Name
CDW Consultants	1412	Broadway Chelsea

Contact Person	Address
Brian Miller	40 Speen St.

City	State	Zip Code	PO #
Framingham	MA	01701	

Telephone Number	FAX Number	Email Address
508-875-2657 x24		bmiller@cdwconsultants.com

Analysis: Ammonia 350.1

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Ammonia 350.1
1	5/8/17	1315	Grab	Surface Water	River	✓

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present: ✓
Seals Intact:
Cooler Temperature: 1.8 °C 16 mL

Sampled by: A. Sundquist
Comments: Please specify "Other" preservative and containers types in this space
H_2SO_4 as preservative

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 5/9/17 11:45	[signature] 5/9/17 1300	[signature] 5/9/17 1822	[signature] 5/9/17 1836
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)