COMMITMENT & INTEGRITY
DRIVE RESULTS

40 Shattuck Road | Suite 110
Andover, Massachusetts 01810
www.woodardcurran.com

T 866.702.6371
T 978.557.8150
F 978.557.7948

Via Electronic Mail

July 6, 2017

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square – Suite 100 (OEP06-01)
Boston, MA 02109-3912

Re: Remediation General Permit – Notice of Intent
Raytheon/BBN, 10 Moulton St., Cambridge, MA

To Whom It May Concern:

Woodard & Curran is submitting the enclosed Remediation General Permit Notice of Intent (NOI) on behalf of Raytheon Company for an existing discharge from the property located at 10 Moulton Street in Cambridge, Massachusetts.

Please let us know if you have any questions or require any further information in support of this NOI.

Sincerely,

WOODARD & CURRAN INC.

Jarrod P. Yoder, PG, LSP
Associate Principal

David R. MacDonald
Senior Vice President

JPY/alm

Enclosure(s)

cc: Robert Luhrs (Raytheon)
James Wilcox (City of Cambridge)

PN: 230601

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Via Electronic Mail

July 18, 2017

Shauna Little
U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square – Suite 100 (OEP06-01)
Boston, MA 02109-3912

Re: Remediation General Permit – Notice of Intent
Raytheon/BBN, 10 Moulton St., Cambridge, MA

Dear Ms. Little:

In accordance with our discussion today, Woodard & Curran is submitting the Best Management Practices Plan (BMPP) Certification at the request of Raytheon Company for an existing discharge from the property located at 10 Moulton Street in Cambridge, Massachusetts. The technical information required by the Remediation General Permit BMPP was included in a Release Abatement Measure Plan that was submitted to MassDEP and an on-site Operation, Maintenance, and Monitoring Plan (OMM Plan). The OMM Plan is a "living document" that can be modified at any time. Raytheon Company certifies that they will modify the OMM Plan to include the terms of the new Remediation General Permit. In addition, Raytheon will include the terms of the new Remediation General Permit in the next Release Abatement Measure Status Report that will be submitted to MassDEP.

If you have additional questions, you may contact me at 978.482.7871. Thank you for your time and consideration.

Sincerely,

WOODARD & CURRAN INC.

Jarrod P. Yoder, PG, LSP
Associate Principal

JPY/alm

Enclosure(s)

cc: Robert Luhrs (Raytheon)
James Wilcox (City of Cambridge)

PN: 230601

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

A. General site information:

<table>
<tr><td rowspan="4">1. Name of site:
Raytheon/BBN</td><td colspan="3">Site address: 10 Moulton Street
Street:</td></tr>
<tr><td colspan="2">City: Cambridge</td><td>State: MA</td><td>Zip: 02138</td></tr>
<tr><td rowspan="4">2. Site owner
Raytheon Company

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Robert Moore</td></tr>
<tr><td colspan="2">Telephone: 781-522-3067</td><td colspan="2">Email: Robert_J_Moore@raytheon.com</td></tr>
<tr><td colspan="3">Mailing address: 870 Winter Street
Street:</td></tr>
<tr><td colspan="2">City: Waltham</td><td>State: MA</td><td>Zip: 02451</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner</td><td colspan="3">Contact Person: Robert Luhrs</td></tr>
<tr><td colspan="2">Telephone: 978-858-9423</td><td colspan="2">Email: Robert_C_Luhrs@raytheon.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 50 Apple Hill Drive</td></tr>
<tr><td colspan="2">City: Tewksbury</td><td>State: MA</td><td>Zip: 01876</td></tr>
<tr><td colspan="2">4. NPDES permit number assigned by EPA:
N/A; previous NOI submitted on September 2, 2016

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):
3-30223
☐ 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):
Alewife Brook	Segment MA71-04	B

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: wetland

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. Y - debris, copper, e-coli (TMDL approved), foam/flocs/scum/oil, lead, DO, PCBs-fish, total P, secchi disk transparency, sed bioassays, taste/odor

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	0.302 cfs
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	7.8

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: attached email dated June 16, 2017

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ■ Existing discharge ☐ New discharge ☐ New source	
Outfall(s): City of Cambridge stormwater sewer to wetland outfall #D36OF0080 north of site, to Alewife Brook.	Outfall location(s): (Latitude, Longitude) 42.397, -71.149
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Initial discharge to catch basin/wetland area, which drains into Alewife Brook. ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ■ Yes ☐ No	
Provide the expected start and end dates of discharge(s) (month/year): present to 2027 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	E350.1	400	2,700	2,700	Report mg/L	---
Chloride		✔	15	E300	10	1,300,000	1,300,000	Report µg/l	---
Total Residual Chlorine		✔	1	M4500	10	12	12	0.2 mg/L	86 ug/L
Total Suspended Solids		✔	32	SM2540D	4,000	22,000	7,780	30 mg/L	---
Antimony	✔		1	E200.9SB	5	< 5	< 5	206 µg/L	4,977 ug/L
Arsenic		✔	1	E200.9AS	2	< 2	< 2	104 µg/L	78 ug/L
Cadmium	✔		1	E200.7	4	< 4	< 4	10.2 µg/L	3.7 ug/L
Chromium III	✔		1	E200.7	10	< 10	< 10	323 µg/L	1,179 ug/L
Chromium VI	✔		1	SW7196A	10	< 10	< 10	323 µg/L	88.9 ug/L
Copper		✔	31	E200.7	25	401	126	242 µg/L	37 ug/L
Iron		✔	31	E200.7	100	5200	5200	5,000 µg/L	1,000 ug/L
Lead		✔	31	E200.9PB	2	98.3	98.3	160 µg/L	8.35 ug/L
Mercury	✔		1	E245.1	0.2	< 0.2	< 0.2	0.739 µg/L	7.04 ug/L
Nickel	✔		1	E200.7	40	< 40	< 40	1,450 µg/L	726.4 ug/L
Selenium	✔		1	E200.9SE	5	< 5	< 5	235.8 µg/L	38.9 ug/L
Silver	✔		1	E200.7	7	< 7	< 7	35.1 µg/L	108.4 ug/L
Zinc		✔	31	E200.7	10	180	180	420 µg/L	1405.4 ug/L
Cyanide	✔		1	SM4500	10	< 10	< 10	178 mg/L	40.4 ug/L
B. Non-Halogenated VOCs									
Total BTEX	✔		16	SW8260C	7	< 7	< 7	100 µg/L	---
Benzene	✔		16	SW8260C	1	< 1	< 1	5.0 µg/L	---
1,4 Dioxane	✔		16	SW8260C	50	< 50	< 50	200 µg/L	---
Acetone		✔	16	SW8260C	10	170	11.2	7.97 mg/L	---
Phenol	✔		1	E420.1	50	< 50	< 50	1,080 µg/L	2,333 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	✔		16	SW8260C	2	< 2	< 2	4.4 µg/L	12.4 ug/L
1,2 Dichlorobenzene	✔		16	SW8260C	2	< 2	< 2	600 µg/L	---
1,3 Dichlorobenzene	✔		16	SW8260C	2	< 2	< 2	320 µg/L	---
1,4 Dichlorobenzene	✔		16	SW8260C	2	< 2	< 2	5.0 µg/L	---
Total dichlorobenzene	✔		16	SW8260C	6	< 6	< 6	763 µg/L in NH	---
1,1 Dichloroethane	✔		16	SW8260C	2	< 2	< 2	70 µg/L	---
1,2 Dichloroethane	✔		16	SW8260C	2	< 2	< 2	5.0 µg/L	---
1,1 Dichloroethylene	✔		16	SW8260C	2	< 2	< 2	3.2 µg/L	---
Ethylene Dibromide	✔		16	SW8260C	2	< 2	< 2	0.05 µg/L	---
Methylene Chloride	✔		16	SW8260C	5	< 5	< 5	4.6 µg/L	---
1,1,1 Trichloroethane	✔		16	SW8260C	2	< 2	< 2	200 µg/L	---
1,1,2 Trichloroethane	✔		16	SW8260C	2	< 2	< 2	5.0 µg/L	---
Trichloroethylene		✔	16	SW8260C	2	13	6.5	5.0 µg/L	---
Tetrachloroethylene		✔	16	SW8260C	2	17	9.8	5.0 µg/L	25.7 ug/L
cis-1,2 Dichloroethylene		✔	16	SW8260C	2	220	108.8	70 µg/L	---
Vinyl Chloride		✔	16	SW8260C	2	9.9	3.8	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	SW8270D	10	< 10	< 10	190 µg/L	
Diethylhexyl phthalate	✔		1	SW8270D	10	< 10	< 10	101 µg/L	17.1 ug/L
Total Group I PAHs	✔		1	SW8270D	0.661	< 0.661	< 0.661	1.0 µg/L	---
Benzo(a)anthracene	✔		1	SW8270D	0.061	< 0.061	< 0.061	As Total PAHs	0.0296 ug/L
Benzo(a)pyrene	✔		1	SW8270D	0.1	< 0.1	< 0.1		0.0296 ug/L
Benzo(b)fluoranthene	✔		1	SW8270D	0.1	< 0.1	< 0.1		0.0296 ug/L
Benzo(k)fluoranthene	✔		1	SW8270D	0.1	< 0.1	< 0.1		0.0296 ug/L
Chrysene	✔		1	SW8270D	0.1	< 0.1	< 0.1		0.0296 ug/L
Dibenzo(a,h)anthracene	✔		1	SW8270D	0.1	< 0.1	< 0.1		0.0296 ug/L
Indeno(1,2,3-cd)pyrene	✔		1	SW8270D	0.1	< 0.1	< 0.1		0.0296 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	SW8270D	0.871	0.12	0.12	100 µg/L	---
Naphthalene	✔		1	SW8270D	0.1	< 0.1	< 0.1	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	E608	0.2	< 0.2	< 0.2	0.000064 µg/L	---
Pentachlorophenol	✔		1	SW8270D	0.97	< 0.97	< 0.97	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	E1664	5000	< 5000	< 5000	5.0 mg/L	---
Ethanol	✔		1	SW8015D	1000	< 1000	< 1000	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	SW8260C	2	< 2	< 2	70 µg/L	156 ug/L
tert-Butyl Alcohol	✔		1	SW8260C	20	< 20	< 20	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	SW8260C	2	< 2	< 2	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		✔	23	field	N/A	7.98 SU	7.41 SU		
Total Hardness (as CaCO3)		✔	29	SM2340C	4,000	620,000	358,000		
Chloride		✔	15	SM4500	20,000	1,300,000	600,600		

E. Treatment system information

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

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

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

The treatment system consists of an oil-water separator, influent and effluent bag filters (1 micron), air stripper (4-tray low profile with forced draft blower), and off-gas treatment using HS-600 filter media. The treated water is being directed to the City of Cambridge storm sewer drainage system. A process and instrumentation diagram is included in Attachment E(4).

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

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

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Air stripper Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	20
Provide the proposed maximum effluent flow in gpm.	20
Provide the average effluent flow in gpm.	1.5
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	N/A

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

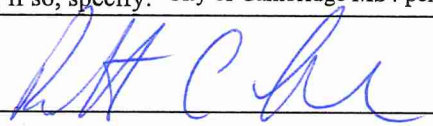
Please see attached supporting documentation.

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

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

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement:	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ■ Other; if so, specify: City of Cambridge MS4 permit	Check one: Yes ■ No ☐ NA ☐
Signature: 	Date: 7-6-17
Print Name and Title: ROBERT C LUHRS	

ATTACHMENT – SECTION B(2)

Site Location, Outfall Location, and Receiving Water Map

City of Cambridge May 31, 2017

City of Cambridge
Massachusetts

1" = 384 ft

www.cambridgema.gov/gis

ATTACHMENT – SECTIONS B(4) - B(6)

7Q10 FLOW, DILUTION FACTOR, AND WQBEL CALCULATIONS

I. Dilution Factor Calculation Method

A. 7Q10

Refer to Appendix V for determining critical low flow; must be approved by State before use in calculations.

B. Dilution Factor

Calculated as follows:

$$Df = \frac{Q_R + Q_P}{Q_P}$$

Q_R = 7Q10 in MGD

Q_P = Discharge flow, in MGD

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Downstream hardness, calculated as follows:

$$C_r = \frac{Q_dC_d + Q_sC_s}{Q_r}$$

C_r = Downstream hardness in mg/L

Q_d = Discharge flow in MGD

C_d = Discharge hardness in mg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) hardness in mg/L

Q_r = Downstream receiving water flow in MGD

Step 2. Total recoverable water quality criteria for hardness-dependent metals, calculated as follows:

Total Recoverable Criteria = $\exp\{m_c [\ln(h)] + b_c\}$

m_c = Pollutant-specific coefficient (m_a for silver)

b_c = Pollutant-specific coefficient (b_a for silver)

ln = Natural logarithm

h = Hardness calculated in Step 1

Step 3. Total recoverable water quality criteria for non-hardness-dependent metals, calculated as follows:

$$\text{WQC in µg/L} = \frac{\text{dissolved WQC in µg/L}}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r C_r - Q_sC_s}{Q_d}$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

C_d = WQBEL in µg/L
Q_s = Upstream flow (7Q10) in MGD
C_s = Ustream (receiving water) concentration in µg/L
Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in µg/L
Q_d = Discharge flow in MGD
Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream concentration in µg/L
Q_d = Discharge flow in MGD
C_d = Influent concentration in µg/L
Q_s = Upstream flow (7Q10) in MGD
C_s = Upstream (receiving water) concentration in µg/L
Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with Step 1, above, and the discharge concentration of a parameter are greater than the WQC calculated for that parameter in accordance with II.A, above

AND

2) the WQBEL determined for that parameter in accordance with II.B, above, is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in Part 2.1.1

of the RGP for that parameter applies.

Step 2. For a parameter not sampled in or not detected in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL determined for that parameter in accordance with II.A or II.B, above;

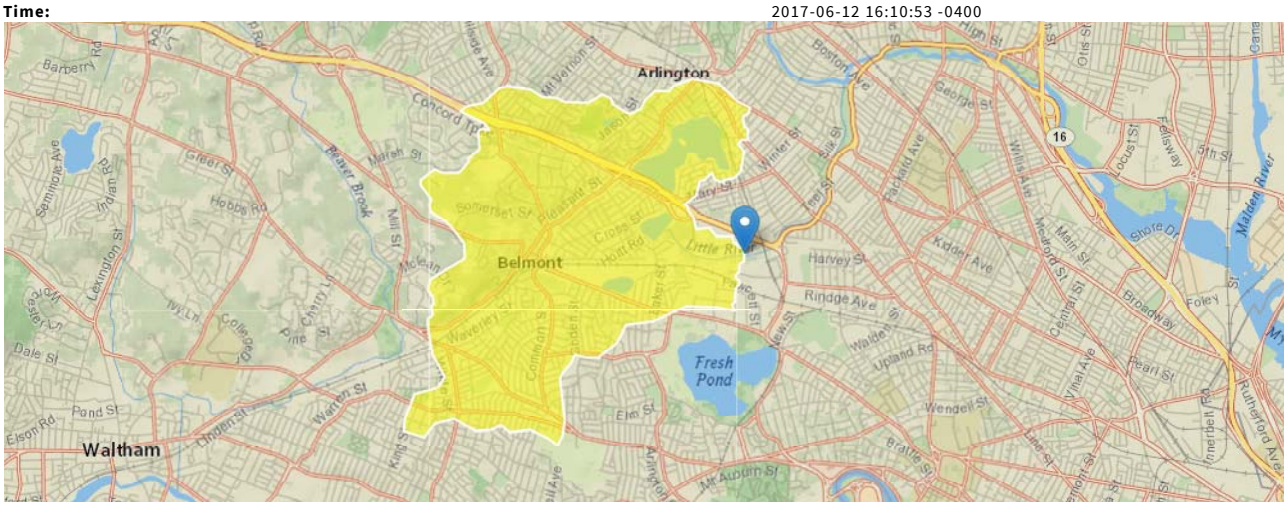
AND

2) the WQBEL determined for that parameter in accordance with II.A or II.B, above is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in

Part 2.1.1 of the RGP for that parameter applies.

StreamStats Report

Region ID:	MA
Workspace ID:	MA20170612161012435000
Clicked Point (Latitude, Longitude):	42.39691, -71.14651
Time:	2017-06-12 16:10:53 -0400



Discharge point for 10 Moulton Street in Cambridge, MA

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4.21	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.584	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.39	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
BSLDEM10M	Mean basin slope computed from 10 m DEM	5.572	percent
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	41.52	percent
FOREST	Percentage of area covered by forest	6.59	percent

Low-Flow Statistics Parameters [100 Percent (4.21 square miles) Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.21	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.584	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.39	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Flow Report [100 Percent (4.21 square miles) Statewide Low Flow WRIR00 4135]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	SE	SEp
7 Day 2 Year Low Flow	0.616	ft^3/s	0.184	1.99	49.5	49.5
7 Day 10 Year Low Flow	0.302	ft^3/s	0.072	1.18	70.8	70.8

Low-Flow Statistics Citations

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

Flow-Duration Statistics Parameters [100 Percent (4.21 square miles) Statewide Low Flow WRIR00 4135]

Therriault, Brian

From: Vakalopoulos, Catherine (DEP) <Catherine.Vakalopoulos@MassMail.State.MA.US>
Sent: Friday, June 16, 2017 3:59 PM
To: Therriault, Brian
Subject: RE: EPA RGP - Dilution Factor Calculation - 10 Moulton Street, Cambridge, MA

Hi Brian,
I've checked the information that you sent and have confirmed that a 7Q10 in Alewife Brook of 0.195 MGD, and design flow of 0.0288 MGD gives a dilution factor of 7.8. You are all set from me. I wanted to point out a resource that Shauna Little at EPA posted. It is a spreadsheet that calculates WQBELs for you and can be found under Appendix V on the main RGP site.

Have a nice weekend.
Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026

From: Therriault, Brian [mailto:Brian.Therriault@arcadis.com]
Sent: Friday, June 16, 2017 9:30 AM
To: Vakalopoulos, Catherine (DEP)
Subject: EPA RGP - Dilution Factor Calculation - 10 Moulton Street, Cambridge, MA

Hi Cathy,

I just left you a voicemail about confirmation of the dilution factor calculation for the preparation of a NOI for a site in Cambridge, MA. I've attached the streamstat report for the discharge and have included below the dilution factor calculation for the Site. The system has a design flow rate of 20 gpm.

Dilution Factor Calculation: 10 Moulton Street, Cambridge, MA

Conversions:			
	7.48	gal/ft3	
	60	sec/min	
	60	min/hr	
	24	hr/day	
Receiving Water Upstream Flow			
Qr =	0.302	ft3/sec	7Q10 from StreamStats
	0.195	MGD	
Discharge Flow			
Qp=	20	gpm	system design flow rate
	0.0288	MGD	

Dilution Factor		
Qc = Downstream Flow = Qr + Qp	0.224	MGD
Dilution Factor = Qc/Qp	7.8	

Please let me know if this dilution factor is acceptable. If you need any additional information, please do not hesitate to call or email.

Thanks,
Brian

Brian Therriault PE | Senior Environmental Engineer | brian.therriault@arcadis.com
Arcadis | Arcadis-US.com
One Executive Drive, Suite 303 Chelmsford MA | 01824 | USA
T. +1 978 322 4534 | M. +1 978 987 5529

Professional Engineer / PE-MA, 48118

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Enter number values in green boxes below

Enter values in the units specified

↓

0.19517	Q_R = Enter upstream flow in **MGD**
0.0288	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

7.77688

Enter values in the units specified

↓

440	C_d = Enter influent hardness in **mg/L** $CaCO_3$
180	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.76	pH in **Standard Units**
22	Temperature in **°C**
1.4	Ammonia in **mg/L**
180	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
10	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
15	Copper in **µg/L**
7000	Iron in **µg/L**
27	Lead in **µg/L**
0	Mercury in **µg/L**
6.5	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
54	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

12	TRC in **µg/L**
2.7	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
383.00	Copper in **µg/L**
7348.00	Iron in **µg/L**
66.32	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
526.40	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
17	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor a
Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry
Discharge flow is equal to the design flow or 1 MGD, whichever is less
Only if approved by State as the entry for Q_R; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State
Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges
Hardness required for freshwater
Salinity required for saltwater (estuarine and marine)
Metals required for all discharges if present and if dilution factor is > 1
Enter 0 if non-detect or testing not required

if >1 sample, enter maximum
if >10 samples, may enter 95th percentile
Enter 0 if non-detect or testing not required

Dilution Factor	7.8					
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	**86**	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	4977	µg/L		
Arsenic	**104**	µg/L	78	µg/L		
Cadmium	**10.2**	µg/L	3.6908	µg/L		
Chromium III	**323**	µg/L	1179.3	µg/L		
Chromium VI	**323**	µg/L	88.9	µg/L		
Copper	242	µg/L	**37.0**	µg/L		
Iron	5000	µg/L	**1000**	µg/L		
Lead	160	µg/L	**8.35**	µg/L		
Mercury	**0.739**	µg/L	7.04	µg/L		
Nickel	**1450**	µg/L	726.4	µg/L		
Selenium	**235.8**	µg/L	38.9	µg/L		
Silver	**35.1**	µg/L	108.4	µg/L		
Zinc	**420**	µg/L	1405.4	µg/L		
Cyanide	**178**	mg/L	40.4	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	2333	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	12.4	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	25.7	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	17.1	µg/L		

Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0296	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0296	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0296	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0296	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0296	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0296	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0296	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	156	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

ATTACHMENT – SECTION B(7)

RECEIVING WATER SAMPLING RESULTS

Receiving Water Sample Results

Sample ID:	RECEIVING WATER	
Sample Date:	5/18/2017	
Parameter		Units
Method 6010 Metals (ICP)		
Zinc	**0.054**	mg/L
Lead	**0.027**	mg/L
Copper	**0.015**	mg/L
Iron	**7.0**	mg/L
Cadmium	< 0.0010	mg/L
Antimony	< 0.020	mg/L
Nickel	**0.0065 J**	mg/L
Silver	< 0.0050	mg/L
Arsenic	< 0.010	mg/L
Selenium	< 0.010	mg/L
Method 7470(A) Mercury (CVAA)		
Mercury	< 0.00020	mg/L
General Chemistry		
Ammonia	**1.4**	mg/L
Chromium III	< 0.010	mg/L
Chromium VI	**0.010**	mg/L
Hardness (CaCO3)	**180**	mg/L

Notes:

mg/L = milligrams per liter

< = not detected above laboratory reporting limit, as indicated

J = result is qualified as estimated

Bold results indicate a detection above the laboratory reporting limit

ATTACHMENT – SECTION C(1)

INFLUENT SAMPLING RESULTS

SYSTEM INFLUENT SAMPLES

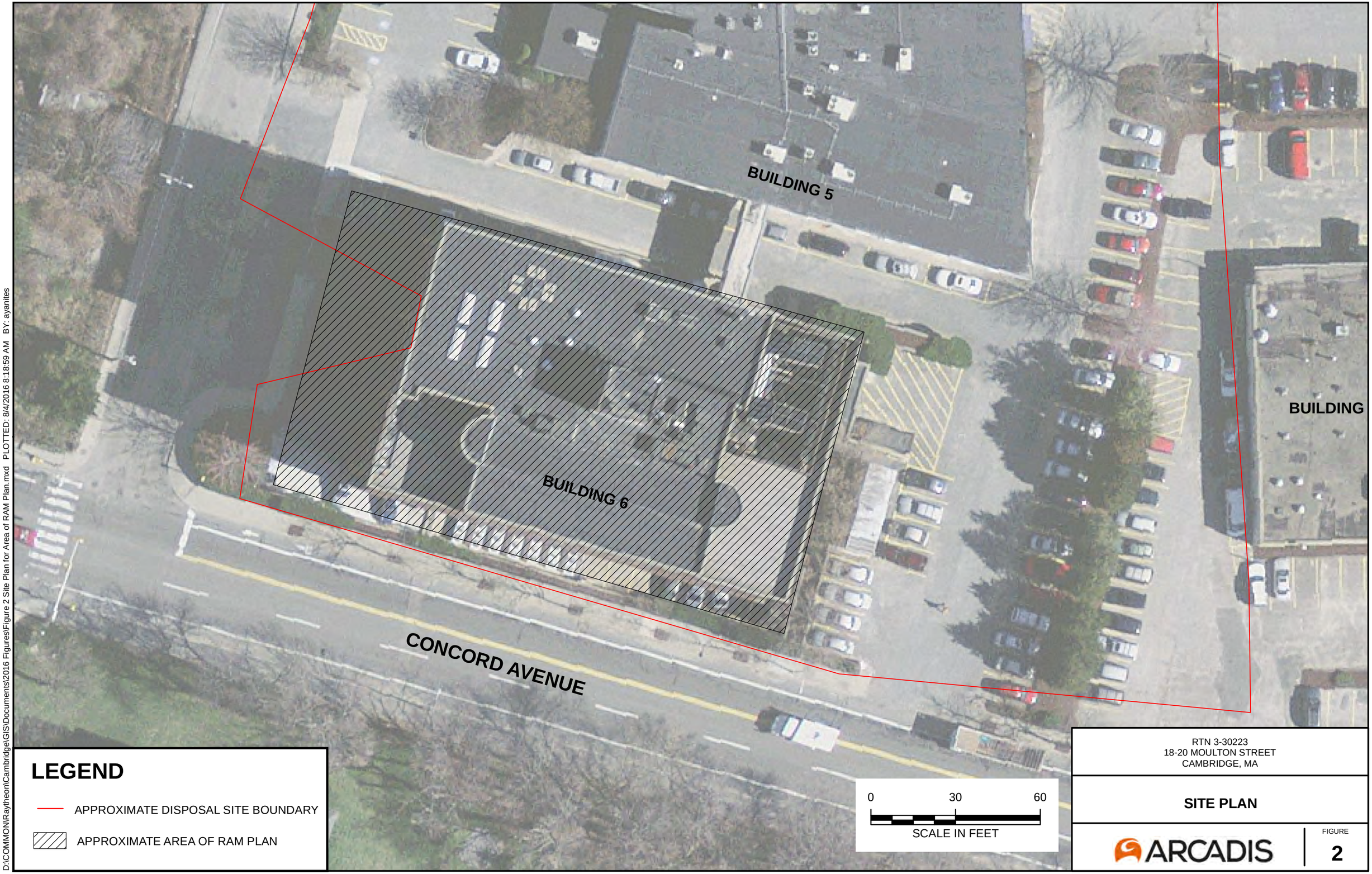
	Metals (Total)								Metals (Dissolved)				
Sample Date:	Zinc	Lead	Copper	Iron	Total Hardness as $CaCO_3$	TSS	pH	Chloride	Zinc	Lead	Copper	Iron	Calcium
	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	SU	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
9/19/2016	97.4	9.1	**114**	1280	--	13	7.34	99	59.7	0.0	**72.7**	394	**--**
9/23/2016	105	0	**147**	2260	--	0	--		78.9	0.0	**87.9**	782	**--**
9/26/2016	182	0	**99.7**	1860	--	9.0	7.30	480	142	0.0	**59.7**	0	67600
10/3/2016	99.5	0	**118**	1270	220	8.0	7.32	470	67.7	0.0	46.4	0	62200
10/10/2016	111	0	**81.1**	673	150	8.0	7.60	290	90.8	0	**52.4**	0	--
10/17/2016	90.9	0	**78.2**	1270	220	11	7.98	370	67.9	0	39.0	0	--
10/25/2016	178	0	**60.0**	548	210	0	6.80	380	50.8	0	40.0	0	--
10/31/2016	140	0	51.0	513	190	0	7.37	360	81.0	0	36.6	107	--
11/7/2016	119	0	52.9	771	260	0	--	460	92.7	0	39.9	129	--
11/15/2016	171	**98.3**	**371**	1900	270	0	7.34	470	66.6	0	46.0	0	--
11/22/2016	70.6	0	**55.0**	700	290	0	7.64		68.8	0	35.3	0	--
11/28/2016	74.8	0	**126**	1,660	320	0.0	7.62		47.8	0	**57.4**	224	--
12/6/2016	--	--	**--**	--	280	0.0	7.52	490	--	--	**--**	--	--
12/9/2016	109	6.3	**116**	1380	280	6.0	--		128	9.0	**65.6**	280	--
12/16/2016	81	0	**122**	1750	330	5.0	--		70	0	**52.6**	0	--
12/22/2016	189	0	**193**	2470	350	12.0	--		171	0	**119.0**	609	--
12/28/2016	60.1	0	**155**	2500	370	8.0	--		54.7	0	**71.9**	0	--
1/3/2017	213	**45**	**100**	1200	52	12.0	--		61.3	0	27.9	304	--
1/10/2017	117	0	**146**	2940	400	9.0	7.73	750	49.6	0	60.4	452	--
1/16/2017	224	12	**401**	4240	350	12	7.05		138	0	**196**	2120	--
1/23/2017	121	5.7	**62**	**7570**	250	14	7.05		84.8	0	0	789	--
1/31/2017	46.2	0	**127**	2140	420	6.0	6.26		34.4	0	**54.4**	171	--
2/7/2017	25	5.0	**130**	3100	420	0.0	7.84	880	21	0	37	0	--
2/16/2017	210	0.0	**100**	3700	460	8.8	7.41	--	180	5.0	45	520	--
2/21/2017	30	0.0	**75**	**5200**	590	4.8	7.57	--	63	0.0	27	170	--
2/28/2017	24	4.0	30	3900	520	12.0	7.58	--	55	0.0	16	1800	--
3/7/2017	30	3.2	**56**	4600	560	9.2	--	1300	15	5.7	21	1200	--
3/13/2017	44	7.3	48	2300	500	5.2	--	--	14	6.3	13	430	--
3/21/2017	84	3.0	**190**	**7200**	540	22	7.60	--	56	3.1	**160**	**5200**	--
3/27/2017	78	5.0	**130**	**6100**	540	22	7.63	--	71	3.4	**59**	1600	**--**
4/5/2017	60	5.4	**160**	**6900**	620	20	7.40	1300	53	6.0	**120**	**5100**	**--**
5/18/2017	**980**	7.8	**230**	4300	420	12	7.40	910	120	0.0	42	400	**--**
5/25/2017					--	**--**	7.66	--	**--**	**--**	**--**	**--**	**--**

SYSTEM INFLUENT SAMPLES

	Metals (Total)				Other parameters				Metals (Dissolved)				
	Zinc	Lead	Copper	Iron	Total Hardness as $CaCO_3$	TSS	pH	Chloride	Zinc	Lead	Copper	Iron	Calcium
	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	SU	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2017 RGP Effluent	420	8.35	37	1000		30	6.5 to 8.3						
Count	31	31	31	31	29	32	24	15	31	31	31	31	2
Max	980.0	98.3	401.0	7,570.0	620.0	22.0	8.0	1,300.0	180.0	9.0	196.0	5,200.0	67,600.0
average	134.3	7.0	126.6	2,845.0	358.0	7.8	7.4	600.6	76.0	1.2	58.1	734.9	64,900.0
Stdev	164.6	18.6	82.7	2,011.2	140.6	6.4	0.4	342.8	40.4	2.5	40.9	1,281.8	2,700.0
95 percentile	526.4	66.3	383.0	7,348.0	605.0	22.0							

ATTACHMENT – SECTION D(1)

SITE PLAN



LEGEND

- APPROXIMATE DISPOSAL SITE BOUNDARY
- APPROXIMATE AREA OF RAM PLAN

0 30 60

SCALE IN FEET

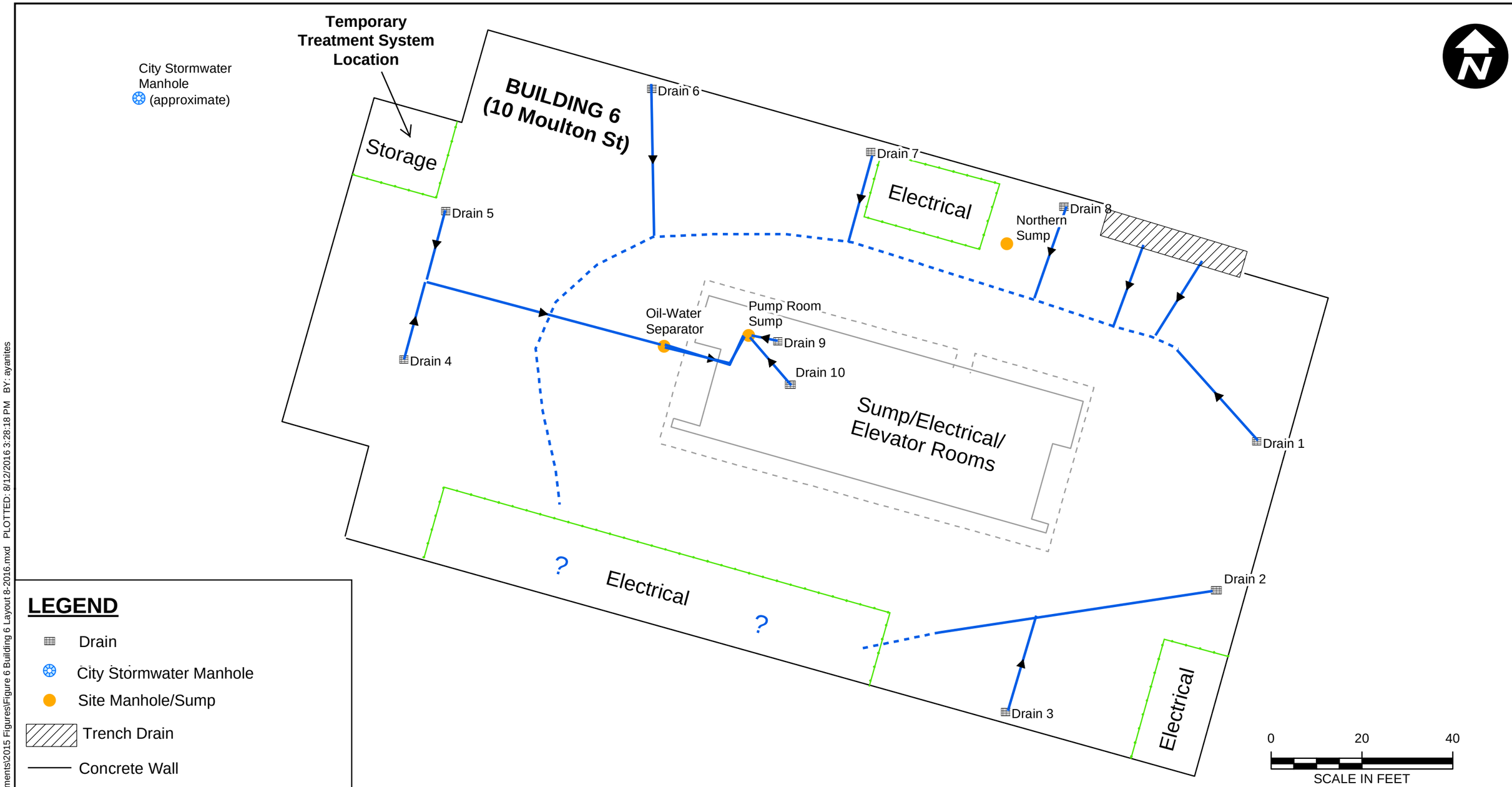
RTN 3-30223
18-20 MOULTON STREET
CAMBRIDGE, MA

SITE PLAN

ARCADIS

FIGURE
2

CITY: BRIGHTON DIV: ENV DB: A.YANITES PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD83 / Massachusetts Mainland
D:\COMMON\Raytheon\Cambridge\GIS\Documents\2016 Figures\Figure 2 Site Plan for Area of RAM Plan.mxd PLOTTED: 8/4/2016 8:18:59 AM BY: ayanites



LEGEND

- Drain
- City Stormwater Manhole
- Site Manhole/Sump
- Trench Drain
- Concrete Wall
- Fenced Areas
- Curb Boundary

Subsurface Pipe Line and Flow Direction

- Dashed where inferred
- Measured using plumbing snake

RTN 3-30223
CAMBRIDGE, MA

**BUILDING 6 PARKING GARAGE
DRAIN AND SUMP LOCATIONS**

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3

CITY: BRIGHTON DIV: ENV DB: A.YANITES PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD83 / Massachusetts Mainland
D:\COMMON\Raytheon\Cambridge\GIS\Documents\2015 Figures\Figure 6 Building 6 Layout 8-2016.mxd PLOTTED: 8/12/2016 3:28:18 PM BY: ayanites

ATTACHMENT – SECTION D(1)

JULY 29, 2016 CITY OF CAMBRIDGE LETTER

CAMBRIDGE DEPARTMENT OF PUBLIC THE WORKS

City of Cambridge
Department of Public Works

Owen O'Riordan, Commissioner

147 Hampshire Street
Cambridge, MA 02139
theworks@cambridgema.gov

voice: 617 349 4800
tdd: 617 499 9924

July 29, 2016

Edward Campbell
Mail Stop 6/6D
BBN Technologies
10 Moulton Street
Cambridge, MA 02138

RE: **Violation of City of Cambridge Wastewater and Stormwater Drainage Use Regulations**
Illicit Discharge to City of Cambridge storm drain on Moulton Street

On June 23, 2016 I was notified via e-mail message from Kathryn Edwards, PE of Arcadis North America that Chlorinated Volatile Organic Compounds (CVOCs) were discharged to the City's storm drain system from the property located at 10 Moulton Street. This notification was based on sampling within City drain manholes on Moulton Street that showed evidence of CVOCs on May 27, 2016 and June 3, 2016.

A meeting was held at the Cambridge Department of Public Works (DPW) on July 7, 2016 to review and discuss this notification and the sampling results from May 27 and June 3. Attendees at this meeting were James Wilcox of Cambridge DPW, Kathryn Edwards of Arcadis North America, Charles Castelluccio, LSP for Raytheon/ BBN Technologies and Robert Luhrs of Raytheon/ BBN Technologies. At this meeting, I was informed that the source of the CVOCs being discharged to the City's storm drain was a sump pump system in the below grade parking structure at 10 Moulton Street. I was also informed that turning off the pumping system could create a buildup of CVOCs within the building that could be dangerous for the occupants.

In response to this notification, DPW sampled at the inlet to the Alewife wetland located off of Cambridgepark Drive on July 8, 2016. This inlet is located downstream of 10 Moulton Street and is the outfall point for this portion of the City's storm drain system. Lab analysis for this sampling did not detect any CVOCs at the wetland inlet.

The discharges sampled on May 27, 2016 and June 3, 2016 are a violation of the City of Cambridge Wastewater and Stormwater Drainage Use Regulations. Article V, A. General Requirements, Section 1- Compliance with Discharge Limits requires all discharges to the City's stormwater system to comply with applicable discharge limits. This discharge is an illicit connection and a violation of the City's EPA NPDES MS4 permit. This discharge is also a violation of the Article V, C. Discharge Prohibitions and Restrictions Applicable to the Stormwater Drainage System, Section 1- Prohibited Discharges into Stormwater Drains. The discharge from the garage sump pump system is contaminated groundwater.

Based on the determination that discharge from the garage sump pump system is a violation of the City's Wastewater and Stormwater Drainage Use Regulations, Raytheon/ BBN Technologies is required to take the following actions:

1. Raytheon/ BBN Technologies shall design and install a temporary treatment system for the garage sump pump system. This treatment system must be capable of removing all pollutants from the discharge that would cause a violation of the City's EPA NPDES MS4 permit. The design of the temporary treatment system shall be submitted to the Cambridge DPW by August 5, 2016. The temporary treatment system shall be installed and treating the garage sump pump system by August 12, 2016.

2. Beginning the week of August 1, 2016, Raytheon/ BBN Technologies shall perform weekly dry weather sampling at four locations within the City's storm drain system and analyze these samples for the presence of CVOCs. The sampling locations will be determined by Cambridge DPW. The laboratory analysis for each sampling event shall be expedited, so that results are available and reported to DPW within 5 business days. Sampling shall continue until such time DPW has determined that the discharge is in compliance with all regulations.

3. Raytheon/ BBN Technologies shall be required to pay for peer review services performed for Cambridge DPW related to this matter. DPW will use Kleinfelder for Licencsed Site Professional services related to this illicit discharge.

4. Raytheon/ BBN Technologies shall apply for coverage under the EPA's Remediation General Permit or process currently in place and a City of Cambridge dewatering permit.

Failure to comply with the required actions may result in termination of this discharge per Section 13.16.050 of the Cambridge Municipal Code. Failure to comply with the required actions may also result in fines per Section 13.16.100 of the Cambridge Municipal Code.

Please feel free to contact me with any questions.

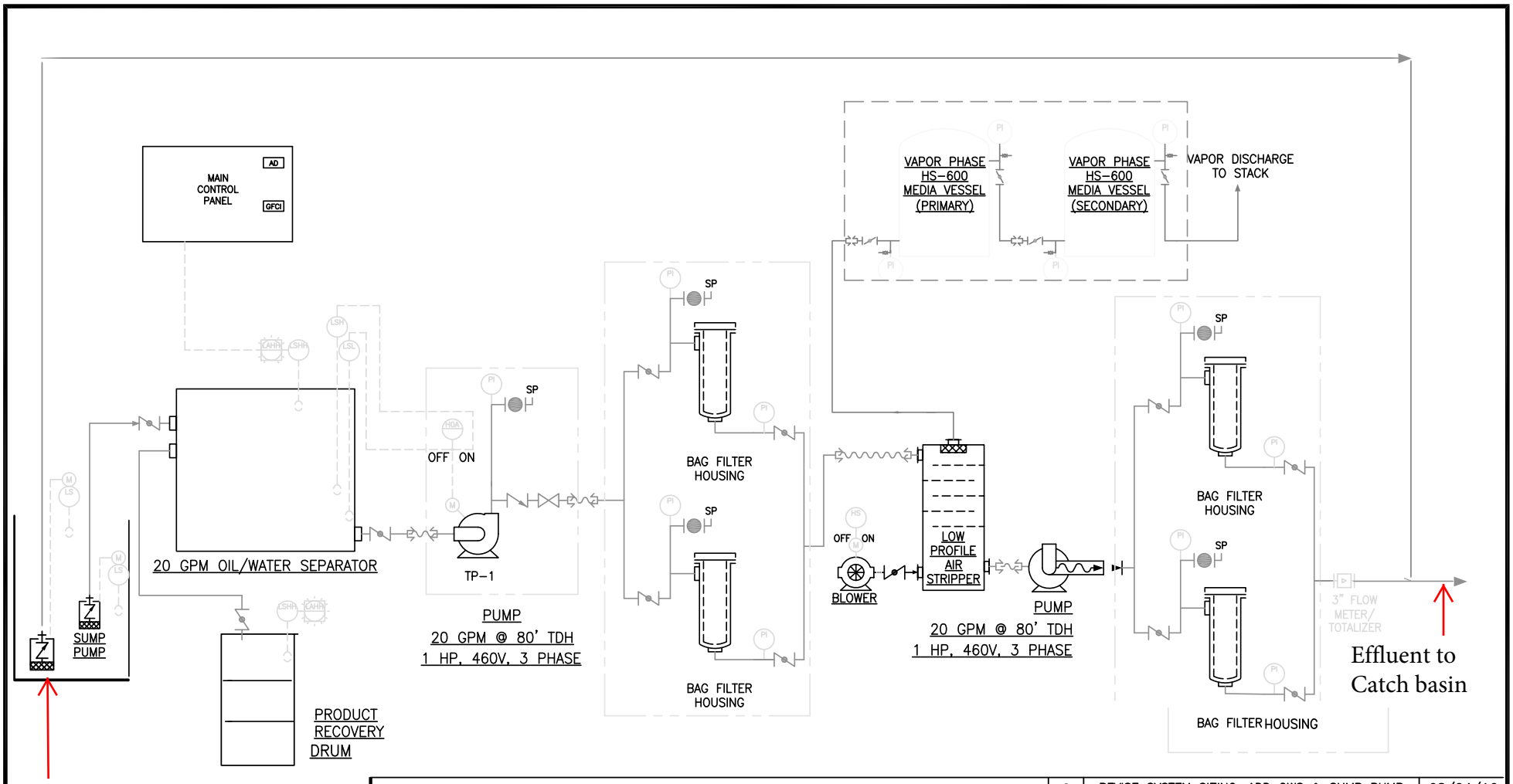
Sincerely,

James F. Wilcox III
Director of Engineering Services

CC: Owen O'Riordan, Commissioner of Public Works
John Nardone, Deputy Commissioner of Public Works
Katherine Watkins, City Engineer
Richard Quateman, LSP, Kleinfelder
Kate Edwards, PE, Arcadis
Charles Castelluccio, LSP
Robert Luhrs, Raytheon
Jeffrey Axelrod, 870 Winter Street, Waltham, MA 02451

ATTACHMENT – SECTION E(4)

PROCESS & INSTRUMENTATION DIAGRAM



Existing Stormwater Management
5HP Sump Pumps
each rated for 200 gpm @ 15 psig
(for flood protection)

LEGEND

- PROCESS PIPING
- FLEXIBLE HOSE
- FLOW DIRECTION
- PIPE CROSS OVER
- BALL VALVE (NORMALLY CLOSE)
- LEVEL FLOAT SWITCH
- MOTOR
- FLOW METER
- BUTTERFLY VALVE
- CHECK VALVE
- GATE VALVE (OPEN)
- SP SAMPLE PORT
- CAM LOCK COUPLING
- PRESSURE GAGE
- LEVEL ALARM HIGH HIGH
- LEVEL SWITCH HIGH
- LEVEL SWITCH HIGH HIGH
- LEVEL SWITCH LOW
- HAND/OFF/AUTO SWITCH

NOTES:
1) MAXIMUM FLOWRATE = 20 GPM
2) NOT ALL VALVES, INSTRUMENTATION AND PIPING, ETC. SHOWN FOR CLARITY.
3) POWER REQUIREMENTS (BY OTHERS) – 460V, 3 PHASE, 20 AMPS.
4) ALARM SCHEDULE: LAHH AT OWS ACTIVATES AUTO-DIALER (AD) AT CONTROL PANEL.

NO.	REVISIONS	DATE
C	REVISE SYSTEM SIZING, ADD OWS & SUMP PUMP	08/04/16
B	ADD VAPOR TREATMENT SYSTEM	08/01/16
A	DRAFT	07/28/15

PROCESS & INSTRUMENTATION DIAGRAM

ARCADIS – CAMBRIDGE RAYTHEON
20 GPM TEMPORARY TREATMENT SYSTEM

SCALE: NTS	APPROVED BY: JAL	DRAWN BY: DES
DATE: 07/28/15		

GROUND/WATER TREATMENT & TECHNOLOGY
39 RIVER STREET
MILLBURY, MA 01527

DWG SIZE: A	SHEET: 1 OF 2	DRAWING NUMBER: 16-2882-PID	C

Figure 1A

ALARM SCHEDULE		
ALARM	TYPE	ACTION
OWS LAHH	HIGH FLOAT LEVEL	SUMP PUMP DEACTIVATE, ALARM LIGHT ON CP AND CALLOUT AUTODIALER
BAG FILTER–1 DPAH	BAG FILTER DIFFERENTIAL HIGH	ALARM LIGHT ON CP AND CALLOUT AUTODIALER
AIR STRIPPER DPAH	AIR STRIPPER DIFFERENTIAL HIGH	ALARM LIGHT ON CP AND CALLOUT AUTODIALER
AIR STRIPPER DPAL	AIR STRIPPER DIFFERENTIAL LOW	DEACTIVATE TP–1 (FIRST TRANSFER PUMP) ALARM LIGHT ON CP AND CALLOUT AUTODIALER
BAG FILTER–2 DPAH	BAG FILTER DIFFERENTIAL HIGH	ALARM LIGHT ON CP AND CALLOUT AUTODIALER

NO.	REVISIONS	DATE
C	REVISE SYSTEM SIZING, ADD OWS & SUMP PUMP	08/04/16
B	ADD VAPOR TREATMENT SYSTEM	08/01/16
A	DRAFT	07/28/15

PROCESS & INSTRUMENTATION DIAGRAM

ARCADIS – CAMBRIDGE RAYTHEON
20 GPM TEMPORARY TREATMENT SYSTEM

NOTES:
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4) ALARM SCHEDULE: LAHH AT OWS ACTIVATES AUTO–DIALER (AD) AT CONTROL PANEL.

SCALE: NTS	APPROVED BY: JAL	DRAWN BY: DES
DATE: 07/28/15		

GROUND/WATER TREATMENT & TECHNOLOGY
39 RIVER STREET
MILLBURY, MA 01527

DWG SIZE: A	SHEET: 2 OF 2	DRAWING NUMBER: 16–2882–PID	C

Figure 1B

ATTACHMENT – SECTION G(2), H(2)

ESA AND NHPA ELIGIBILITY

Section G(2) – Endangered Species Act eligibility determination

Criterion "C": Woodard & Curran has determined that the discharge and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat. The discharge is not located in an area with designated critical habitat. The discharge is in Middlesex County which has listed the northern long-eared bat as a threatened species located in a wide variety of forested habits in the summer. The initial discharge point of the system is to a catch basin located approximately 0.5 miles from the discharge to Alewife Brook. After discharge to the catch basin, it combines with storm water flow and travels through the City's storm water infrastructure until it discharges to Alewife Brook. By the time the discharge reaches Alewife Brook, it has been significantly diluted and therefore has "no effect" on any federally threatened or endangered listed species.

Section H(2) – National Historic Preservation Act eligibility determination

Criterion "B": Woodard & Curran searched the Massachusetts Cultural Resource Information System (MACRIS) database and the National Register of Historic Places database for historic properties located in the City of Cambridge. Although historic properties are present within the City of Cambridge, the discharges and discharge-related activities from the site are not anticipated to have the potential to affect these historic properties.

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

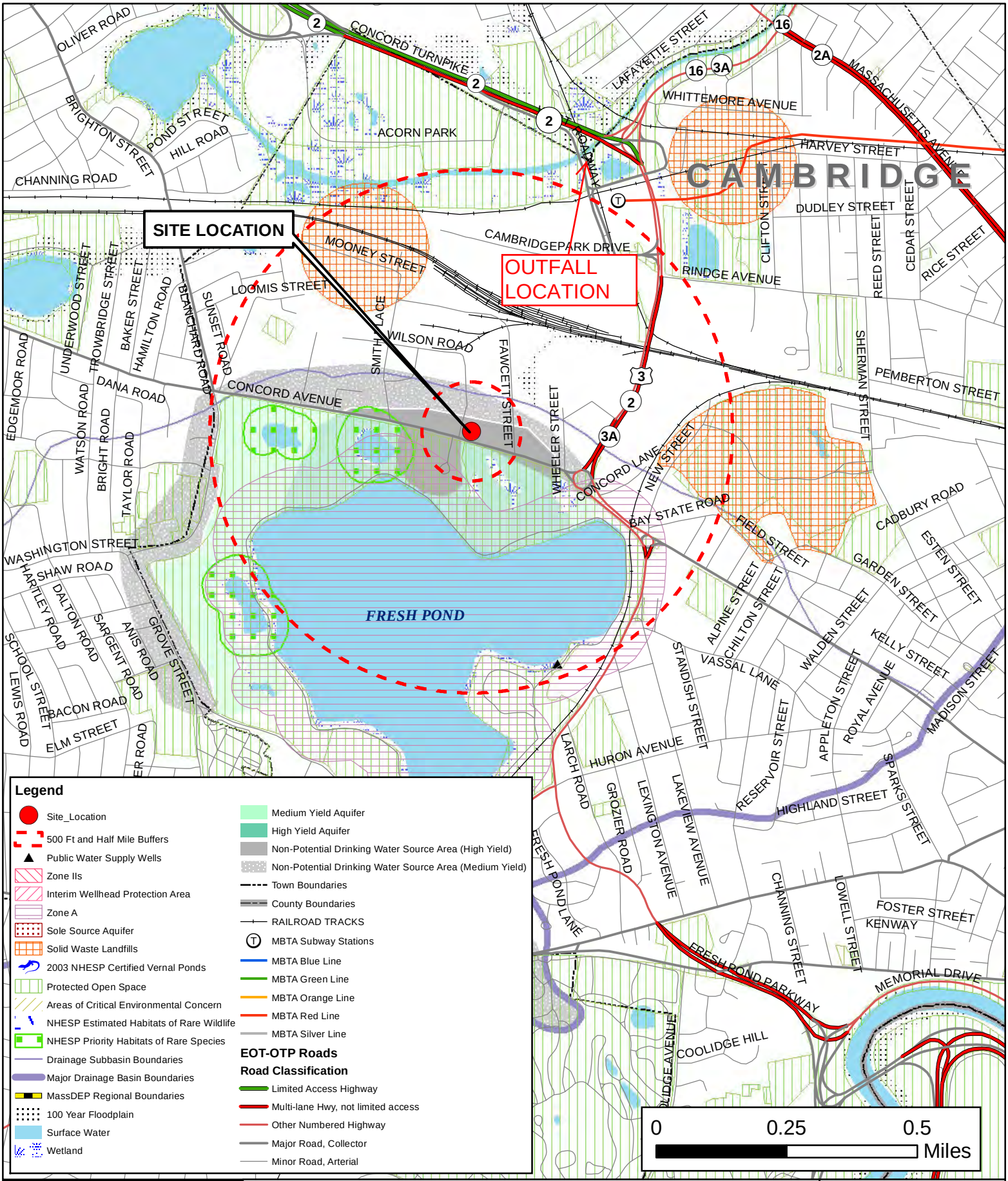
FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

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



ARCADIS
Infrastructure · Water · Environment · Buildings

FIGURE 4: ENVIRONMENTAL RECEPTORS MAP
RTN 3-30223
20 MOULTON STREET
CAMBRIDGE, MASSACHUSETTS

N
W E
S