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May 28, 2019
File No. 04.0190842.01

JUN 04 2019

[Handwritten signature]

United States Environmental Protection Agency
Dewatering GP Processing
Industrial Permit Unit (OEP 06- 4)
5 Post Office Square – Suite 100
Boston, Massachusetts 02109-3912

Re: United States Environmental Protection Agency
Dewatering General Permit, Notice of Intent
F107 Transmission Line Rebuild
Line and Foundation Installation
Durham, New Hampshire 03824

Dear Sir or Madam:

This letter transmits Notice of Intent (NOI) requesting a determination of coverage under the United States Environmental Protection Agency's (EPA's) Dewatering General Permit (DGP), pursuant EPA's National Pollutant Discharge Elimination System (NPDES) program. This NOI was prepared in accordance with the general requirements of the NPDES and related guidance documentation provided by EPA. The completed NOI Form is provided in **Appendix A**.

The proposed project is associated with the replacement of the existing F107 transmission line from Madbury Substation, in Durham, New Hampshire to the Portsmouth Substation in Newington, New Hampshire. The transmission line is being replaced as part of Eversource's Seacoast Reliability Project. The proposed dewatering activities covered under this NOI are for the construction of the F107 transmission line transition area for underground to overhead lines including new line and foundation installation adjacent to Little Bay in Durham, New Hampshire.

1. GENERAL FACILITY INFORMATION

This NOI has been prepared for the management of water that will be generated during dewatering activities associated with the construction activities within the Eversource Right-of-Way at 295 Durham Point Road in Durham, New Hampshire (the Site). A Site Locus is provided as **Figure 1** and a Site Plan is provided as **Figure 2**.

Construction activities will include excavation for the installation of underground lines and foundations for new overhead structures and lines. Installation will require excavation of approximately 4,500 cubic feet of material. Dewatering will be required during this excavation to lower the groundwater table as work is being performed.



A sample was collected from the on-site residential water supply well (DW-1) and from Little Bay (SW-1) on May 3, 2019 in order to characterize the dewatering discharge and the receiving water. Samples were analyzed for metals, pH, and chloride. None of the 13 metal analytes were detected above the applicable respective NH Ambient Groundwater Quality Standards or NPDES Effluent Limitations. Results are summarized in **Table 1** below, and the analytical laboratory reports and provided in **Appendix B**.

Table 1
Groundwater Analytical Test Results
F107 Transmission Line – 295 Durham Point Road
Durham, New Hampshire

Analytical Sample ID	DW-1	SW-1	Laboratory Reporting Limit (ug/l)	Water Quality Criteria for Toxic Substances ² (ug/l)	
				Marine Acute	Marine Chronic
Date collected	5/3/2019	5/3/2019			
Metals (ug/l)					
Antimony, Total	1.01 J	-	4	No Standard	No Standard
Arsenic, Total	0.41 J	-	0.5	69	36
Cadmium, Total	ND	-	0.2	33	7.9
Chromium, Total	0.33 J	-	1	No Standard	No Standard
Chromium (Hexavalent)	ND	-	10	1,100	50
Copper, Total	1.49	-	1	4.8	3.1
Iron, Total	176	-	50	No Standard	No Standard
Lead, Total	ND	-	1	210	8.1
Mercury, Total	ND	-	0.2	1.8	0.94
Nickel, Total	1.74	-	2	74	8.2
Silver, Total	ND	-	0.4	1.9	No Standard
Zinc, Total	3.44	-	10	90	81
pH (S.U.)	7.2	-	-	No Standard	No Standard
Chloride (mg/l)	4.1	-	0.2	No Standard	No Standard
Hardness (mg/l)	-	1,700	0.660	No Standard	No Standard

Notes:

1. ND indicates non-detected. "-" indicates not tested for that parameter. "J" indicates estimated value.
2. Water Quality Criteria for Toxic Substances as set forth in Table 1703-1 of Env-Wq 1700.

2. DISCHARGE INFORMATION

Groundwater will be pumped from the excavation directly into settling tanks. After sufficient time has passed to allow for the settling of suspended solids, the water will be pumped to dewatering filter bags and discharged to Little Bay via Outfall 1. Little Bay is designated as a Class B marine water and will accordingly receive a maximum and minimum monthly pH discharge of 8.0 and 6.5, respectively. The estimated maximum daily and average monthly flows are 2,500 GPD and 1,200 GPD, respectively. The proposed discharge will be periodic and is scheduled to occur for approximately 24 days from mid-August to mid-September 2019.



3. CONTAMINANT INFORMATION

Based on the analytical laboratory results in **Appendix B**, there will be no pH neutralization or dechlorination chemicals used in the discharge. Information provided in the New Hampshire Department of Environmental Services (NHDES) 2016 305(b)/303(d) list Watershed Report Card (**Appendix C**) indicates that the portion of Little Bay adjacent to Outfall 1 is not supporting/severely impaired for aquatic life and not supporting marginally impaired for fish consumption and shellfishing. Discharge water characterization and the discharge standards covered in **Section 2** indicated that the proposed dewatering will not cause any new or exacerbate any existing water quality impairments.

4. DETERMINATION OF ENDANGERED SPECIES ACT ELIGIBILITY (ESA)

Preliminary United States Fish and Wildlife Service IPaC review indicated the potential presence of the Northern Long-eared bat (NLEB) on Site (see **Appendix D**). It was determined that the NLEB is not likely to occur in the project action area as defined in Appendix A given that there is no proposed tree removal or vegetative maintenance occurring at the Site. Therefore, the project is eligible under Criterion A. No other federally listed species were identified on or near the Site.

5. DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT (NHPA) REQUIREMENTS

Question 1: The site is considered a new facility and is avoiding any activity that involves subsurface disturbance for the implementation of dewatering activities.

Question 2: The property is not listed in the National Register of Historic Places and no prior surveys or disturbances have revealed the existence of a historic property or artifact. The entire project area, including the Site, was evaluated via a Phase 1A archeological survey in April 2015. The Site was not identified in this report as having any potential historic or cultural sensitivity, and no further archeological study was recommended. See **Appendix E** for New Hampshire Department of Historical Resources concurrence. Based on this information, the project is eligible under Criterion A.

6. SUMMARY

It is our opinion that the proposed discharge is eligible for coverage under the NPDES DGP. On behalf of Eversource, GZA is requesting coverage under the NPDES DGP for the discharge of groundwater to Little Bay in support of construction dewatering activities that are to take place in the Eversource Right-of-Way adjacent to 295 Durham Point Road, Durham, New Hampshire.

Attachments include Locus Map, Site Plan, NOI form, Analytical Laboratory Results, Endangered Species Information, and Historical Preservation Information.

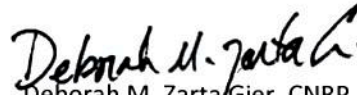


If you have additional questions, please contact Mr. Ian Gaudreau at (603) 232-8776 or at ian.gaudreau@gza.com.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.


Ian Gaudreau
Engineer I


Deborah M. Zarta Gier, CNRP
Principal

IPG/DMZ:ams

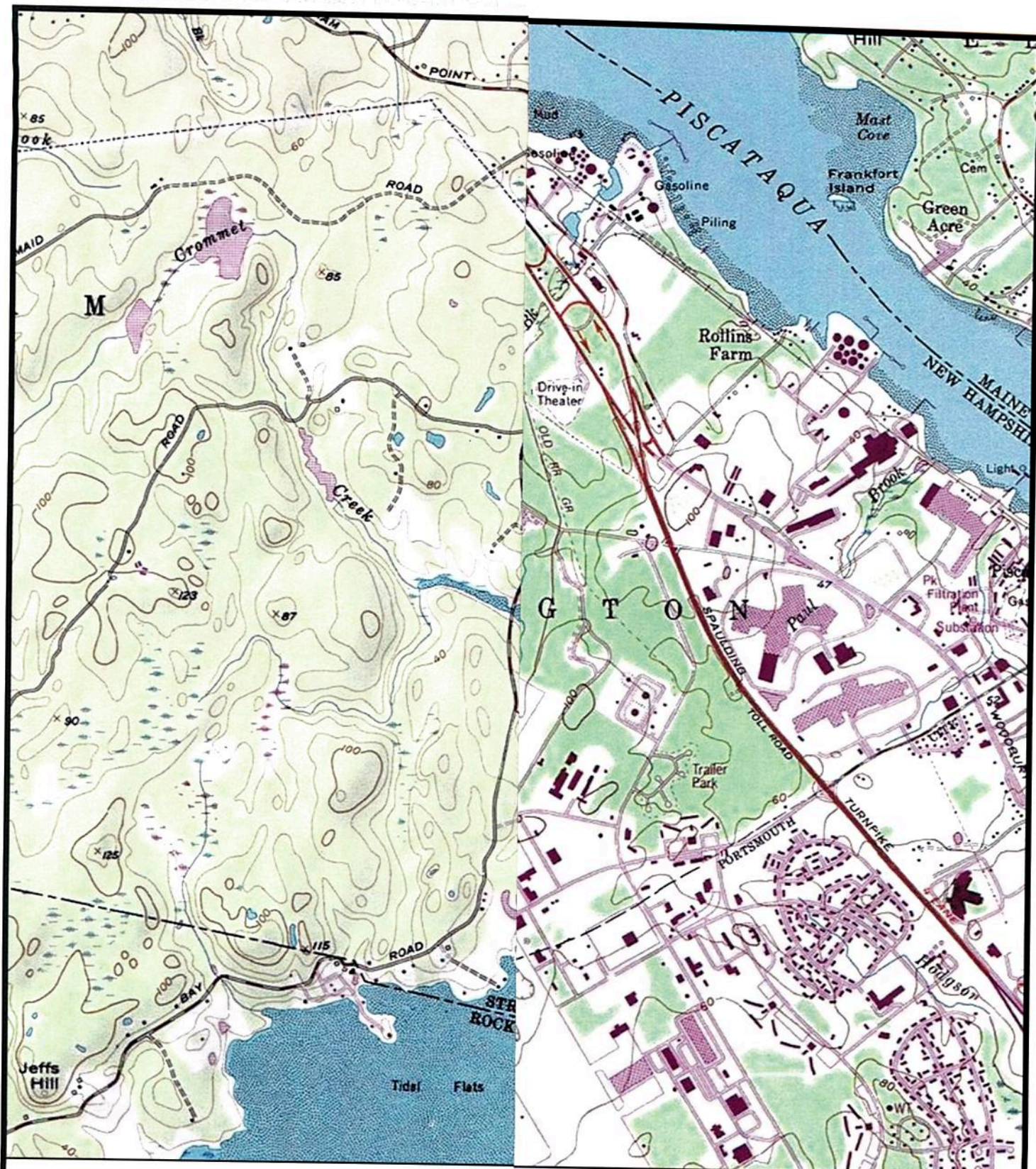
\\GZABedford\Jobs\04\Jobs\0190800s\04.0190842.00 JCR - Eversource F107\04.0190842.01\Work\Dewatering\Getchell Well DGP\1 - FINAL F107 DGP Getchell Well Cover Letter 052819.docx

Attachments: Figure 1 – Locus Plan
Figure 2 – Aerial Plan
Appendix A – NOI Form
Appendix B – Analytical Laboratory Results
Appendix C – Little Bay Water Quality Data
Appendix D – Endangered Species Information
Appendix E – Historical Preservation Information

cc: Eversource Energy, ATTN: Kurt Nelson
NHDES Wastewater Engineering Bureau



Figure 1 – Locus Plan



LEGEND

N LINE
ING LOCATION
ROAD

RE

EVERSOURCE
ENERGY



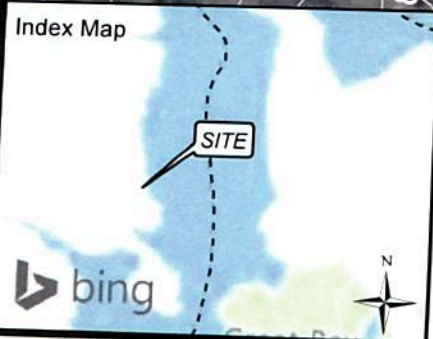
GZA GeoEnvironmental, Inc.
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Figure 2 – Aerial Plan



Little Bay



LEGEND

APPROXIMATE PROPERTY LINE
2-FT GROUND SURFACE

LINE
ING LOCATION
OAD
PLAN
RE

EVERSOURCE
ENERGY

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

Aerial Imagery: 2015



Appendix A – NOI Form

APPENDIX V

NOTICE OF INTENT INSTRUCTIONS AND SUGGESTED FORMATS AND MAILING ADDRESSES

I. Notice of Intent (NOI) Instructions

In order to be covered by the Dewatering General Permit (DGP) applicants must submit a written NOI to EPA and the appropriate state agency. The NOI consists of either the suggested NOI format included in Part II of this Appendix or another format of official correspondence that contains all of the required information listed in the General Permit and the NOI instructions.

A. Instructions for the NOI - At a minimum, the NOI must include the following information for each individual facility. Additional information may be attached as needed.

1. General facility information.

- a) Provide the name and mailing address of the facility.
- b) Provide the facility location address, including the latitude and longitude, if different from the mailing address. Provide the SIC code(s) and type of business.
- c) Provide the legal name, address, telephone and fax number of the owner and operator (if not the owner) if different from the facility information. Indicate whether the owner is a Federal, State, Tribal, private or other entity.
- d) Provide a topographic map indicating the location(s) of the facility and receiving water, and discharge point(s).
- e) Provide the answer to the following questions:
 - i. Has a prior NPDES permit been granted for this discharge? If yes, provide the permit number:
 - ii. Is the discharge a "new discharger" as defined by 40 CFR Section 122.2?
 - iii. Is the facility covered by an individual NPDES permit? If yes, provide the permit number.
 - iv. Is there a pending application on file for any other permit with EPA for this discharge?

2. Discharge information.

- a) Provide the name of the receiving water(s) into which each outfall will discharge and identify if it is freshwater or marine water and its state water quality classification.
- b) Describe the activity (construction dewatering, dewatering of foundation sumps etc.) that

generates the discharge(s) to be covered by the permit. If available, please provide a facility water flow diagram. Also, if known, identify and describe any and all treatment methods and provide a technology diagram depicting the treatment of discharge at the facility.

- c) Provide the number of outfalls; and for each outfall, provide the following information:
- i. Please estimate the flow in GPD – both the maximum daily and average flow rate of the discharge in gallons per day;
 - ii. Provide the maximum and minimum monthly pH of discharge (in s.u.);
 - iii. Identify the source of the water being discharged (i.e. potable water, surface water, groundwater). If the source is groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit. If the source is potable water, EPA will calculate the Total Residual Chlorine effluent limits.
 - iv. If known, state whether the discharge(s) is continuous, periodic (occurs regularly, for example monthly or seasonally, but is not continuous all year) or intermittent (occurs sometimes but not regularly), or both. If the discharge is periodic, specify the frequency (number of days or months per year) of the discharge and the specific months of discharge. If the discharge is intermittent, specify the number of days per year there is intermittent discharge. If the dewatering is temporary and will occur within a finite period of time, state the approximate start and end dates of dewatering.
 - v. Provide the latitude and longitude of each discharge point (outfall) with an accuracy of 100 feet (see EPA's siting tool at: http://www.epa.gov/tri/report/siting_tool/) and,
 - vi. If the source of the discharge is potable water, provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water. Also, please attach any calculation sheets used to support stream flow and dilution calculations. See Appendix VII for equations and additional information.
 - vii. For Massachusetts facilities only: Determine if the discharge is into an Area of Critical Environmental Concern (ACEC) and, if yes, provide the name of the ACEC. See Section 3.4 and Appendix 1 of the General Permit for more information on ACECs.

3. Contaminant Information.

- a) If the facility uses any pH neutralization and/or dechlorination chemicals, provide the product name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge; and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for aquatic

organism(s)).

- b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge.
- c) In order to be eligible for this permit, applicants will need to take a minimum of one sample of the untreated water at the construction site and have it analyzed for the metal parameters listed in Appendix VIII. If the levels of contamination for the proposed discharge are equal or less than the metal parameters listed in Appendix III of the RGP, the application will be eligible for a DGP. Otherwise, the applicant should apply for the Remediation General Permit (RGP) for contaminated discharges.

4. Determination of Endangered Species Act Eligibility (ESA)

Provide documentation of ESA eligibility and respond to all questions as required in Appendix IV

5. Documentation of National Historic Preservation Act (NHPA) Requirements

Provide documentation and respond to all questions as required in Appendix III:

6. Supplemental Information

Applicants should provide any supplemental information needed to meet the requirements of the permit, including, any analytical data used to support the application (see Section 3.c above), and any certification(s) required by the permit.

7. Signature Requirements

The Notice of Intent must be signed and dated by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, waste product or finished product; (4) if the discharge of dewatering subsequently mixes with other wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharges; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and the National Historic Preservation Act; and (6) 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, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

B. Submission of NOI to EPA

Filing with EPA - All operators located in Massachusetts and New Hampshire that apply for coverage under this General Permit must submit a written NOI to EPA-New England. The completed, signed NOI formats and attachments must be submitted to EPA-NE electronically at: GeneralPermit.Dewatering@epa.gov, or mailed to:

US Environmental Protection Agency
Dewatering GP Processing
Industrial Permit Unit (OEP 06- 4)
5 Post Office Square – Suite 100
Boston, MA 02109-3912

Filing with the states - A copy of the NOI format filed with EPA-NE must also be filed with state agencies. The state agency may elect to develop a state specific form or other additional information requirements.

1. Discharges in Massachusetts

- a. Facilities located in Massachusetts with discharges to Class B or SB waters must: Provide a completed copy of the Notice of Intent to:

Massachusetts Department of Environmental Protection
Division of Watershed Management
8 New Bond Street
Worcester, MA 01606

The State of Massachusetts no longer will take an active participation in approving or certifying DGP discharges to Class B or SB waters. No transmittal form or fees are necessary to Class B & SB waters. The Notice of Intent to the State is for informational purposes only.

- b. Facility located in Massachusetts with discharges to Class A or SA waters must:
Provide a completed copy of the Notice of Intent. The completed state transmittal form, and a copy of the check for the appropriate State fee to:

Massachusetts Department of Environmental Protection
Division of Watershed Management
8 New Bond Street
Worcester, MA 01606

Submit the appropriate fee and copy of the transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA 02211

The State Transmittal Form & Number for the Permit Application & Payment is found here:

<http://www.mass.gov/eea/agencies/massdep/service/approval/transmittal-form-for-payment.html>

Discharges into Class A or SA waters require approval by the Massachusetts Department of Environmental Protection

2. Discharges in New Hampshire

All applicants must provide a completed copy of their Notice of Intent to:

New Hampshire Department of Environmental Services
Water Division, Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

II. Suggested Notice of Intent (NOI) Format

1. General facility information. Please provide the following information about the facility.

a) Name of facility: F107 Transmission Line Replacement		Mailing Address for the Facility: Transmission Line Right of Way - N/A	
b) Location Address of the Facility (if different from mailing address):	Facility Location	Type of Business: Transmission Line	
	longitude: <u>70° 52' 14.79"W</u> latitude: <u>43° 6' 19.92"N</u>	Facility SIC codes: 4911 Electric Services	
c) Name of facility owner: <u>Eversource Energy</u> Owner's email: <u>dena.champy@eversource.com</u> Owner's Tel #: <u>(508) 954-2736</u> Owner's Fax #: _____ Address of owner (if different from facility address) <u>13 Legends Drive</u> <u>Hooksett, NH</u> Owner is (check one): 1. Federal ____ 2. State ____ 3. Private ☒ 4. Other ____ (Describe) _____			
Legal name of Operator, if not owner: _____ Operator Contact Name: _____ Operator Tel Number: _____ Fax Number: _____ Operator's email: _____ Operator Address (if different from owner) _____			
d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? ☒			
e) Check Yes or No for the following: 1. Has a prior NPDES permit been granted for the discharge? Yes ____ No ☒ If Yes, Permit Number: _____ 2. Is the discharge a "new discharger" as defined by 40 CFR Section 122.2? Yes ☒ No ____ 3. Is the facility covered by an individual NPDES permit? Yes ____ No ☒ If Yes, Permit Number ____ 4. Is there a pending application on file with EPA for this discharge? Yes ____ No ☒ If Yes, date of submittal: _____			

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

- a) Name of receiving water into which discharge will occur: Little Bay - Adams Point Mooring Field
State Water Quality Classification: B Freshwater: Marine Water: X
- b) Describe the discharge activities for which the owner/applicant is seeking coverage:
✓ 1. Construction dewatering of groundwater intrusion and/or storm water accumulation.
2. Short-term or long-term dewatering of foundation sumps.
3. Other.
- c) Number of outfalls 1
- For each outfall:
- d) Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow 2,500 GPD
Average Monthly Flow 1,200 GPD
- e.) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.0 Min pH 6.5
In accordance with State of NH Class B waters.
- f.) Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit.
Groundwater
- g.) What treatment does the wastewater receive prior to discharge?
None
- h.) Is the discharge continuous? Yes No ✓ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) I
If (P), number of days or months per year of the discharge and the specific months of discharge ;
If (I), number of days/year there is a discharge approx. 21 days
Is the discharge temporary? Yes ✓ No
If yes, approximate start date of dewatering August 15, 2019 approximate end date of dewatering September 15, 2019
- i.) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. -70.870364° lat. 43.105479°; Outfall 2: long. lat. ; Outfall 3: long. lat. .
- j.) If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations N/A cfs
(See Appendix VII for equations and additional information)

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC):

- k.) Does the discharge occur in an ACEC? Yes _____ No _____
If yes, provide the name of the ACEC: _____

3. Contaminant Information

- a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for aquatic organism(s)).
- b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge.

4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendix IV. In addition, respond to the following questions.

- a) Which of the three eligibility criteria listed in Appendix IV, Criterion (A, B, or C) have you met? Criterion A _____
- b) Please attach documentation with your NOI supporting your response. Please see Appendix IV for acceptable documentation

5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

- a) See Screening Process in Appendix III and respond to questions regarding your site and any historic properties listed or eligible for listing on the National Register of Historic Places. Question 1: Yes ☒ No ☐ ; Question 2: No ☒ Yes ☐
- b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes ☐ or No ☒ If yes, attach the results of the consultation(s).
- c) Which of the three National Historic Preservation Act eligibility criterion listed in Appendix III, Criterion (A, B, or C) have you met? Criterion A _____
- d) Is the project located on property of religious or cultural significance to an Indian Tribe? Yes ☐ or No ☒ If yes, provide that name of the Indian Tribe associated with the property. _____

6. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) 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, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: F-107 Transmission Line Project

Operator signature:



Print Full Name and Title: Kurt I. Nelson Sr. Land Use Licensing and Permitting Specialist

Date: 05/28/2019

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.



Appendix B – Analytical Laboratory Results



ANALYTICAL REPORT

Lab Number:	L1918485
Client:	GZA GeoEnvironmental, Inc. 5 Commerce Park N. Suite 201 Bedford, NH 03110
ATTN:	Deborah Zarta Gier
Phone:	(603) 232-8721
Project Name:	295 DPR
Project Number:	04.0190664.13
Report Date:	05/14/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1918485-01	DW-1	WATER	DURHAM	05/03/19 12:40	05/03/19
L1918485-02	SW-1	WATER	DURHAM	05/03/19 12:50	05/03/19

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Kelly Stenstrom

Title: Technical Director/Representative

Date: 05/14/19

METALS

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

SAMPLE RESULTS

Lab ID: L1918485-01
Client ID: DW-1
Sample Location: DURHAM

Date Collected: 05/03/19 12:40
Date Received: 05/03/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	0.00101	J	mg/l	0.00400	0.00042	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00041	J	mg/l	0.00050	0.00016	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Chromium, Total	0.00033	J	mg/l	0.00100	0.00017	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Copper, Total	0.00149		mg/l	0.00100	0.00038	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Iron, Total	0.176		mg/l	0.0500	0.0191	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	05/07/19 11:29	05/07/19 19:14	EPA 7470A	1,7470A	EA
Nickel, Total	0.00174	J	mg/l	0.00200	0.00055	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM
Zinc, Total	0.00344	J	mg/l	0.01000	0.00341	1	05/10/19 14:46	05/13/19 12:35	EPA 3005A	1,6020B	AM



Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

SAMPLE RESULTS

Lab ID: L1918485-02
Client ID: SW-1
Sample Location: DURHAM

Date Collected: 05/03/19 12:50
Date Received: 05/03/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	1700		mg/l	0.660	NA	1	05/10/19 10:49	05/10/19 18:55	EPA 3005A	1,6010D	AB



Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1234401-1									
Mercury, Total	ND	mg/l	0.00020	0.00009	1	05/07/19 11:29	05/07/19 19:10	1,7470A	EA

Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 02 Batch: WG1235792-1									
Hardness	ND	mg/l	0.660	NA	1	05/10/19 10:49	05/10/19 17:27	1,6010D	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1235849-1									
Antimony, Total	0.00092 J	mg/l	0.00400	0.00042	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Arsenic, Total	ND	mg/l	0.00050	0.00016	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Cadmium, Total	ND	mg/l	0.00020	0.00005	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Chromium, Total	ND	mg/l	0.00100	0.00017	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Copper, Total	ND	mg/l	0.00100	0.00038	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Iron, Total	ND	mg/l	0.0500	0.0191	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Lead, Total	ND	mg/l	0.00100	0.00034	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Nickel, Total	ND	mg/l	0.00200	0.00055	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Silver, Total	ND	mg/l	0.00040	0.00016	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM
Zinc, Total	ND	mg/l	0.01000	0.00341	1	05/10/19 14:46	05/13/19 12:03	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A



Lab Control Sample Analysis Batch Quality Control

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	Limits	Limits			
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1234401-2									
Mercury, Total	106	-	-	-	80-120	-	-	-	-
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 02 Batch: WG1235792-2									
Hardness	98	-	-	-	80-120	-	-	-	-
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1235849-2									
Antimony, Total	102	-	-	-	80-120	-	-	-	-
Arsenic, Total	97	-	-	-	80-120	-	-	-	-
Cadmium, Total	111	-	-	-	80-120	-	-	-	-
Chromium, Total	106	-	-	-	80-120	-	-	-	-
Copper, Total	102	-	-	-	80-120	-	-	-	-
Iron, Total	110	-	-	-	80-120	-	-	-	-
Lead, Total	99	-	-	-	80-120	-	-	-	-
Nickel, Total	107	-	-	-	80-120	-	-	-	-
Silver, Total	111	-	-	-	80-120	-	-	-	-
Zinc, Total	111	-	-	-	80-120	-	-	-	-

Matrix Spike Analysis Batch Quality Control

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1234401-3 QC Sample: L1918485-01 Client ID: DW-1									
Mercury, Total	ND	0.005	0.00514	103	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1235792-3 WG1235792-4 QC Sample: L1918527-05 Client ID: MS Sample									
Hardness	1360	66.2	1440	121	1400	60	75-125	3	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1235849-3 QC Sample: L1918872-01 Client ID: MS Sample									
Antimony, Total	0.0183	1	0.6880	67	Q	-	75-125	-	20
Arsenic, Total	0.0351	0.24	0.2714	98	-	-	75-125	-	20
Cadmium, Total	0.0041	0.102	0.1334	127	Q	-	75-125	-	20
Chromium, Total	0.0461	0.4	0.4700	106	-	-	75-125	-	20
Copper, Total	0.2640	0.5	0.2532	0	Q	-	75-125	-	20
Iron, Total	26.6	2	25.3	0	Q	-	75-125	-	20
Lead, Total	0.030	1.02	0.8465	80	-	-	75-125	-	20
Nickel, Total	0.0803	1	1.153	107	-	-	75-125	-	20
Silver, Total	0.0005J	0.1	0.01121	11	Q	-	75-125	-	20
Zinc, Total	4.572	1	5.469	90	-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1234401-4 QC Sample: L1918485-01 Client ID: DW-1						
Mercury, Total	ND	ND	mg/l	NC		20



INORGANICS & MISCELLANEOUS

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

SAMPLE RESULTS

Lab ID: L1918485-01
Client ID: DW-1
Sample Location: DURHAM

Date Collected: 05/03/19 12:40
Date Received: 05/03/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	4.1		mg/l	1.0	0.20	1	-	05/06/19 21:32	1,9251	TL
pH (H)	7.2		SU	-	NA	1	-	05/03/19 22:40	121,4500H+-B	AS
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	05/03/19 23:15	05/03/19 23:43	1,7196A	AS



Project Name: 295 DPR
 Project Number: 04.0190664.13

Lab Number: L1918485
 Report Date: 05/14/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1233527-1										
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	05/03/19 23:15	05/03/19 23:42	1,7196A	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1234105-1										
Chloride	0.72	J	mg/l	1.0	0.20	1	-	05/06/19 19:52	1,9251	TL

Lab Control Sample Analysis Batch Quality Control

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1233518-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1233527-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1234105-2								
Chloride	107		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1233527-4 QC Sample: L1918485-01 Client ID: DW-1												
Chromium, Hexavalent	ND	0.1	0.099	99		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1234105-4 QC Sample: L1917724-06 Client ID: MS Sample												
Chloride	78.	20	85	35	Q	-	-		58-140	-		7

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L1918485
Report Date: 05/14/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1233518-2 QC Sample: L1918485-01 Client ID: DW-1						
pH (H)	7.2	7.2	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1233527-3 QC Sample: L1918485-01 Client ID: DW-1						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1234105-3 QC Sample: L1917724-06 Client ID: DUP Sample						
Chloride	78.	72	mg/l	8	Q	7

Project Name: 295 DPR
Project Number: 04.0190664.13

Serial_No: 05141912:46
Lab Number: L1918485
Report Date: 05/14/19

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1918485-01A	Plastic 950ml HNO3 preserved	A	<2	<2	3.7	Y	Absent		FE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),PB-6020T(180),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1918485-01B	Plastic 500ml unpreserved	A	7	7	3.7	Y	Absent		HEXCR-7196(1),CL-9251(28),PH-4500(.01)
L1918485-02A	Plastic 250ml HNO3 preserved	A	<2	<2	3.7	Y	Absent		HARDT(180)

Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers



Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1.8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers



Project Name: 295 DPR
Project Number: 04.0190664.13

Lab Number: L1918485
Report Date: 05/14/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO₃-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH₃-BH: Ammonia-N and Kjeldahl-N, EPA 350.1:

Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO₃-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO₄-E,

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg.
EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

PAGE 1 OF 1

5/3/19

21918485

320 Forbes Blvd
Mansfield, MA 02048
Tel. 508-822-9300

Project Information

Project Location: Durham

Project #: 04.0190664.13

Project Manager: Deb Zarta Gier

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Client: GZA

Address: 5 Commerce Park N.
Suite 201 - Bedford, NH

Phone: 603-232-8731

Email: deborah.zartagier@gza.com

Additional Project Information:

- Samples were not field filtered

- DW-1: fresh water
- SW-1: salt water (surface water)

Report Information - Data Deliverables

☒ ADE_x

 EMAIL☐ Same as Client info PO #:

Billing Information

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program Criteria

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2

SVOC: ☐ ABN ☐ PAH

METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15

METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13

EPH: ☐ Ranges & Targets ☐ Ranges Only

VPH: ☐ Ranges & Targets ☐ Ranges Only

PCB ☐ PEST

TPH: ☐ Quant Only ☐ Fingerprint

Ph, Chloride, Hex Cr
Total Cd, Cr, Cu, Ni, Pb, Ag, Zn
Total As, Fe, Hg, Sb
Hardness (total)

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do

Preservation
☐ Lab to do

Sample Comments

TOTAL # BOTTLES

[illegible]

Preservative
 A = None
 B = HCl
 C = HNO₃
 D = H₂SO₄
 E = NaOH
 F = MeOH
 G = NaHSO₄
 H = Na₂S₂O₃
 I = Ascorbic Acid
 J = NH₄Cl
 K = Zn Acetate
 O = Other

Container Type

Preservative

Relinquished By

Date/Time

Received By:

Date/Time

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



Appendix C – Little Bay Water Quality Data

Welcome to New Hampshire's Watershed Report Cards built from the 2016, 305(b)/303(d)

Each Watershed Report Card covers a single 12 digit Hydrologic Unit Code (HUC12), on average a 34 square mile area. Each Watershed Report Card has three components;

1. **REPORT CARD** - A one page card that summarizes the overall use support for Aquatic Life, Primary Contact (i.e. Swimming), and Secondary Contact (i.e. Boating) Designated Uses on every Assessment Unit ID (AUID) within the HUC12.
2. **HUC 12 MAP** - A map of the watershed with abbreviated labels for each AUID within the HUC12.
3. **ASSESSMENT DETAILS** - Anywhere from one to forty pages with the detailed assessment information for each and every AUID in the Report Card and Map.

How are the Surface Water Quality Assessment determinations made?

All readily available data with reliable Quality Assurance/Quality Control is used in the biennial surface water quality assessments. For a full understanding of how the Surface Water Quality Standards (Env-Wq 1700) are translated into surface water quality assessments we urge the reader to review the 2016 Consolidated Assessment and Listing Methodology (CALM) at

<https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/documents/r-wd-17-08.pdf>

Where can I find more advanced mapping resources?

GIS files are available by assessment cycle at <ftp://pubftp.nh.gov/DES/wmb/WaterQuality/SWQA/>

I'd like to see the more raw water quality data?

The web mapping tool allows you to download the data used in the assessment of the primary contact and aquatic life designated uses by clicking on the "Data Access Waterbody Data (Aquatic Life and Swimming Uses)" link for any assessment unit. (http://www2.des.state.nh.us/WaterShed_SWQA/SWQA_Map.aspx)

How are assessments coded in the report card?

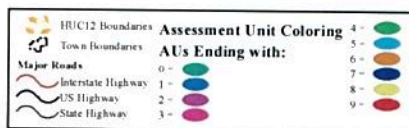
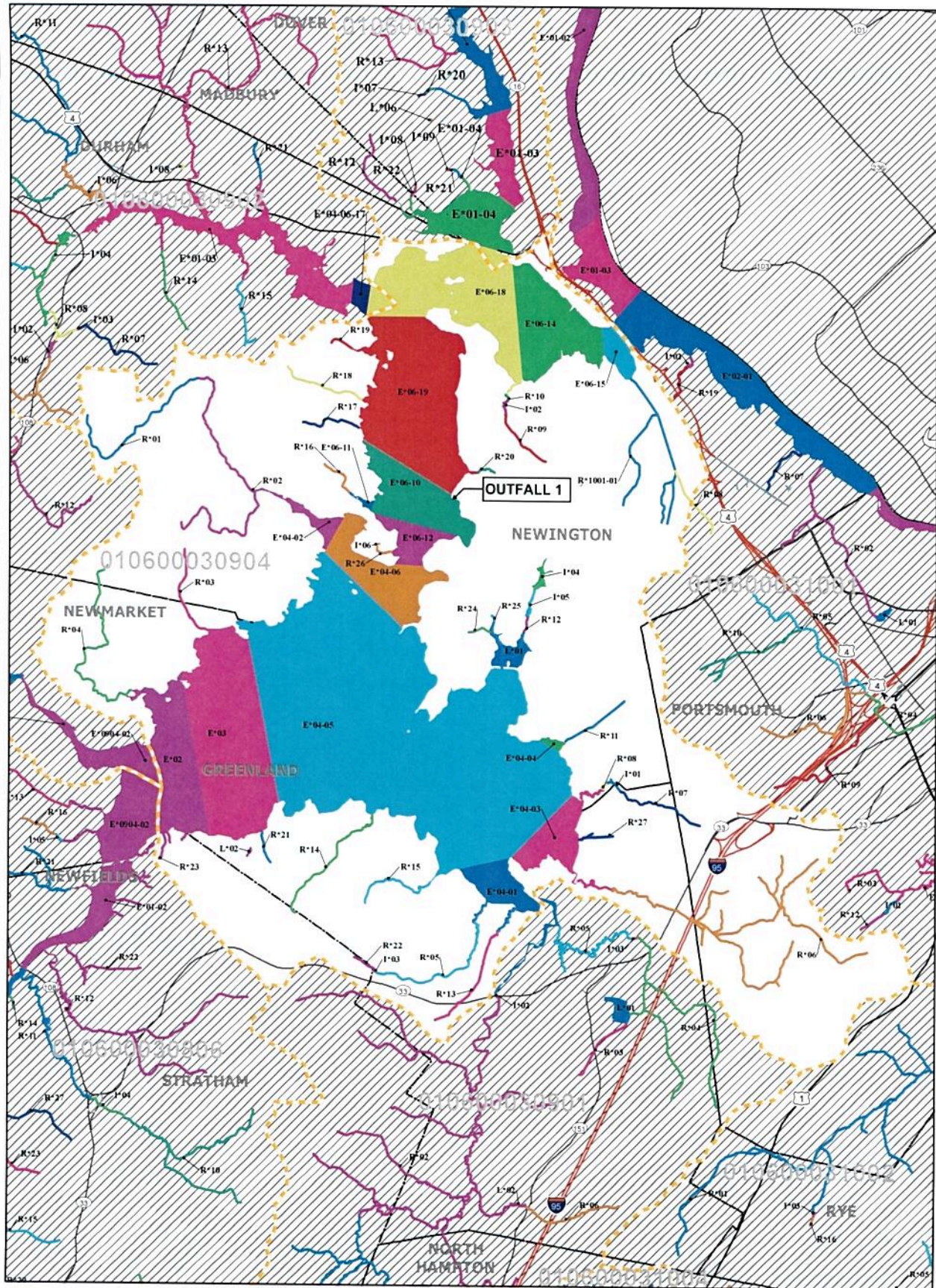
Assessment outcomes are displayed on a color scale as well as an alpha numeric scale that provides additional distinctions for the designated use and parameter level assessments as outlined in the table below.

		Severe	Poor	Likely Bad	No Data	Likely Good	Marginal	Good
		Not Supporting, Severe	Not Supporting, Marginal	Insufficient Information – Potentially Not Supporting	No Data	Insufficient Information – Potentially Full Supporting	Full Support, Marginal	Full Support, Good
CATEGORY	Description							
*Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;							
4A	TMDL^ Completed	4A-P	4A-M or 4A-T					
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	TMDL^ Needed	5-P	5-M or 5-T					

* "Category 1" only exists at the Assessment Unit Level.

^ TMDL stands for Total Maximum Daily Load studies (<http://des.nh.gov/organization/divisions/water/wmb/tmdl/index.htm>)

AUIDs For HUC12: 010600030904 - Great Bay



Abbrev. Label HUC 12
 L*03 010700060201
 AUID = NH LAK700060201-03

Assessment Unit IDs are derived from the HUC12 they reside within. The labels have been shortened on this map for presentation purposes.
 Example: the Label "L*03" in HUC12 = 010700060201 represents AUID = "NH LAK700060201-03"
 In rare cases where an AUID extends beyond the boundary of a single HUC12, additional portions of the end of the HUC 12 number have also been replaced.



Scale: 1:50,530

Assessment Unit ID NHEST600030904-06-10
 Assessment Unit Name ADAMS POINT MOORING FIELD SZ
 Primary Town DURHAM

Size 0.3570 SQUARE MILES
 Beach N
 Assessment Unit Category*~ 5-P

2016, 305(b)/303(d) - All Reviewed
 Parameters by Assessment Unit

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority	Source Name (Impairments only)
Aquatic Life	5-P		.ALPHA.-ENDOSULFAN (ENDOSULFAN 1)	N	2006	N/A	3-ND		
			.BETA.-ENDOSULFAN (ENDOSULFAN 2)	N	2006	N/A	3-ND		
			2-METHYLNAPHTHALENE	N	2006	N/A	3-ND		
			ACENAPHTHENE	N	2006	N/A	3-ND		
			ACENAPHTHYLENE	N	2006	2006	3-ND		
			ALUMINUM	N	2006	2006	3-ND		
			AMMONIA (UN-IONIZED)	N	2015	N/A	2-G		
			ANTHRACENE	N	2006	N/A	3-ND		
			ANTIMONY	N	2006	N/A	3-ND		
			ARSENIC	N	2006	2006	3-ND		
			BENZO(A) PYRENE (PAHS)	N	2006	2000	3-ND		
			BENZO[A]ANTHRACENE	N	2006	2000	3-ND		
			BENZO[B]FLUORANTHENE	N	2006	N/A	3-ND		
			BENZO[G,H,I]PERYLENE	N	2006	N/A	3-ND		
			BENZO[K]FLUORANTHENE	N	2006	N/A	3-ND		
			BIPHENYL	N	2006	N/A	3-ND		
			CADMIUM	N	2006	2004	3-ND		
			CHRYSENE (C1-C4)	N	2006	N/A	3-ND		
			COPPER	N	2006	N/A	3-ND		
			Chlorophyll-a		2013	NA	2-M		
			DDD	N	2006	N/A	3-ND		
			DDE	N	2006	N/A	3-ND		
			DDT	N	2006	N/A	3-ND		
			DIBENZ[A,H]ANTHRACENE	N	2006	2006	3-ND		
			DIELDRIN	N	2006	N/A	3-ND		
			Dissolved oxygen saturation		2013	NA	2-M		
			ENDOSULFAN SULFATE	N	2006	N/A	3-ND		
			ENDRIN	N	2006	N/A	3-ND		

Severe Not Supporting, Severe	Poor Not Supporting, Marginal	Likely Bad Insufficient Information - Potentially Full Supporting	No Data No Data	Likely Good Insufficient Information - Potentially Full Supporting	Marginal Full Support, Marginal	Good Full Support, Good
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*DES Categories; 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>)

Assessment Unit ID NHEST600030904-06-10
 Assessment Unit Name ADAMS POINT MOORING FIELD SZ
 Primary Town DURHAM

Size 0.3570 SQUARE MILES
 Beach N
 Assessment Unit Category* 5-P

2016, 305(b)/303(d) - All Reviewed
 Parameters by Assessment Unit

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority	Source Name (Impairments only)
Aquatic Life	5-P		Estuarine Bioassessments	N	2013	MED.	5-P	LOW	Source Unknown
			FLUORANTHENE	N	2006	2006	3-ND		
			FLUORENE	N	2006	N/A	3-ND		
			HEXACHLOROBENZENE	N	2006	N/A	3-ND		
			INDENO[1,2,3-CD]PYRENE	N	2006	N/A	3-ND		
			IRON	N	2006	N/A	3-ND		
			LEAD	N	2006	2006	3-ND		
			LINDANE	N	2006	N/A	3-ND		
			Light Attenuation Coefficient	N	2013	MED.	5-M	LOW	Source Unknown
			MERCURY	N	2006	2006	3-ND		
			NAPHTHALENE	N	2006	N/A	3-ND		
			NICKEL	N	2006	2001	3-ND		
			Nitrogen (Total)	N	2013	MED.	3-PNS		
			OXYGEN, DISSOLVED	N	2015	2004	2-G		
			PH	N	2009	2000	3-ND		
			PHENANTHRENE	N	2006	N/A	3-ND		
			POLYCHLORINATED BIPHENYLS	N	2004	N/A	3-ND		
			PYRENE	N	2006	N/A	3-ND		
			SILVER	N	2006	2006	3-ND		
			TOXAPHENE	N	2006	N/A	3-ND		
			TRANS-NONACHLOR	N	2006	N/A	3-ND		
			ZINC	N	2006	N/A	3-ND		
				N	2006	N/A	3-ND		
Drinking Water After Adequate Treatment	2-G		ESCHERICHIA COLI	N	2009	2009	3-ND		
			FECAL COLIFORM	N	2015	2015	3-PNS		
Fish Consumption	5-M		Mercury	N			5-M	LOW	Source Unknown
									Atmospheric Deposition - Toxics

Severe Not Supporting, Severe	Poor Not Supporting, Marginal	Likely Bad Insufficient Information - Potentially Full Supporting	No Data No Data	Likely Good Insufficient Information - Potentially Full Supporting	Marginal Full Support, Marginal	Good Full Support, Good
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*DES Categories; 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>)

Assessment Unit ID NHEST600030904-06-10
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 Primary Town DURHAM

Size 0.3570 SQUARE MILES
 Beach N
 Assessment Unit Category*~ 5-P

2016, 305(b)/303(d) - All Reviewed
 Parameters by Assessment Unit

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority	Source Name (Impairments only)
Fish Consumption	5-M		Polychlorinated biphenyls	N			5-M	LOW	Source Unknown
Primary Contact Recreation	2-M		CHLOROPHYLL-A	N	2015	2014	2-M		
			ENTEROCOCCUS	N	2015	2010	2-G		
Secondary Contact Recreation	2-G		ENTEROCOCCUS	N	2015	2006	2-G		
Shellfishing	5-M		Dioxin (including 2,3,7,8-TCDD)	N			5-M	LOW	Source Unknown
			Fecal Coliform	N			3-PNS		
			Mercury	N			5-M	LOW	Atmospheric Deposition - Toxics
									Source Unknown
			Polychlorinated biphenyls	N			5-M	LOW	Source Unknown
Wildlife	3-ND								

Severe Not Supporting, Severe	Poor Not Supporting, Marginal	Likely Bad Insufficient Information - Potentially Full Supporting	No Data No Data	Likely Good Insufficient Information - Potentially Full Supporting	Marginal Full Support, Marginal	Good Full Support, Good
---	---	--	---------------------------	---	---	-----------------------------------

*DES Categories; 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>)



Appendix D – Endangered Species Information

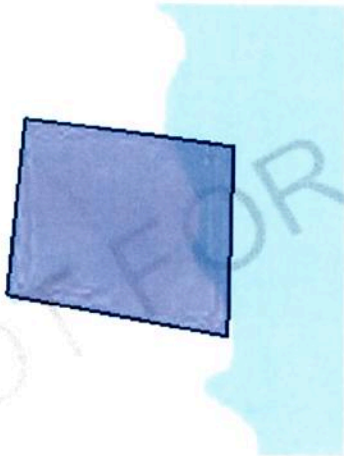
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Strafford County, New Hampshire



Local office

New England Ecological Services Field Office

☎ (603) 223-2541

📅 (603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

<http://www.fws.gov/newengland>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Oct 15 to Aug 31

Black-billed Cuckoo *Coccyzus erythrophthalmus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9399>

Breeds May 15 to Oct 10

Bobolink *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

Buff-breasted Sandpiper *Calidris subruficollis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9488>

Breeds elsewhere

Canada Warbler *Cardellina canadensis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Aug 10

Dunlin *Calidris alpina arctica*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Lesser Yellowlegs *Tringa flavipes*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Nelson's Sparrow *Ammodramus nelsoni*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 15 to Sep 5

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Red-throated Loon *Gavia stellata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Semipalmated Sandpiper *Calidris pusilla*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be

used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (●)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald Eagle
 Non-BCC Vulnerable
 (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black-billed Cuckoo
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Bobolink
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Buff-breasted Sandpiper
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Canada Warbler
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Dunlin
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Lesser Yellowlegs
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and

avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird

impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#), and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE WETLAND

[E2US3N](#)

[E2US3/EM1N](#)

[E2EM1P](#)

RIVERINE

[R1UBV](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



Appendix E – Historical Preservation Information



NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

State of New Hampshire, Department of Cultural Resources
19 Pillsbury Street, Concord, NH 03301-3570
TDD Access: Relay NH 1-800-735-2964
www.nh.gov/nhdhr

603-271-3483
603-271-3558
FAX 603-271-3433
preservation@dcr.nh.gov

October 5, 2016

Sarah Allen
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03301

Re: Report Reviews: *Results of Phase IB Archaeological Survey Madbury, Durham, Newington and Portsmouth, NH*. Seacoast Reliability Project, prepared and submitted by Victoria Bunker, Inc. (R&C 6528)

Dear Ms. Allen:

The Division of Historical Resources (Division) is in receipt of your request for review for the report prepared by Dr. Victoria Bunker of Victoria Bunker, Inc. for the project cited above. The Division concurs with the recommendations provided and finds the information acceptable as written. The Phase IA identified twenty eight areas of sensitivity in Newington and Durham where archaeological testing was recommended. Phase IB testing identified two historic sites both in Durham, the remainder of the areas yielded negative results, no further survey was recommended.

In accordance with the National Historic Preservation Act of 1966 (P.L. 89-655), as amended, and as implemented by regulations of the Federal Advisory Council on Historic Preservation ("36 CFR Part 800: Protection of Historic Properties"), the New Hampshire Division of Historical Resources/State Historic Preservation Office has reviewed the undertaking referenced above to identify potential effects on properties listed, or potentially eligible for listing, in the National Register of Historic Places.

Based upon the information provided in the above cited report, it has been determined that additional Phase II testing will be required if avoidance is not feasible for the LaRoche Brook historic site (27 ST 105). The second site identified Langmaid Road Quarry site (27 ST 119) was not considered potentially eligible, no further work was recommended for this resource. Please contact me at 603-271-2813 for discussion on avoidance measures or continued survey.

Sincerely,

Edna Feighner
Review and Compliance Coordinator, Archaeologist

Cc: Catherine Finneran, Eversource
Dena Champy, Project Manager
Kurt Nelson, Eversource
Mark Doperalski, Eversource