1. Conservation Commission Pack 02/19/2020

Documents:

NANTUCKET POINT OF VIEW LLC _ 9 LINCOLN AVENUE (30_137) SE48_.PDF
SUZANNE KELLER AND ANDREW BENNETT _ 49 MILBROOK ROAD (56_241) SE48_.PDF
TOWN OF NANTUCKET _ 4 CALIFORNIA AVENUE AND ALABAMA AVENUE (60 _ VARIOUS) SE48_.PDF
LEWIS E KELSEY JR_ 17 19 21 FOLGER AVENUE (80_151 110 AND 42 RESPECTIVELY) SE48_.PDF
NANTUCKET ISLAND SCHOOL OF DESIGN AND THE ARTS INC _ 23 AND 25 WAUWINET ROAD (20_36 AND 80) SE48_.PDF
CARLTON NEEL AND NINA MARIE WEISSENBERGER _ 84 POCOMO ROAD (15_40) SE48_.PDF
TEN EASY STREET NOMINEE TRUST _ 10 EASY STREET (42 3 1_78) SE48_.PDF
ESCAPEHATCH LLC _ 20 WESTERN AVENUE (87_74) SE48_.PDF
KEVIN MARTIN _ 15_27 HIGH BRUSH PATH (56_VARIOUS) SE48_.PDF
RDA_ MID_ISLAND SERVICE LIMITED PARTNERSHIP _ 41 AND 43 SPARKS AVENUE (55_267 4 AND 267 3).PDF
RDA_THE JRG REALTY TRUST _ 27 WASHING POND ROAD (31_30).PDF
MMOD CUMMINGS _ 36 CROOKED LANE (41_330) SE48_3255.PDF
SBPF DAILY LOGS 2_3_2020 TO 2_7_2020.PDF
SBPF DAILY LOGS 2_10_2020 THRU 2_14_2020.PDF
OHI REPORT OF SBPF SAND SAMPLING SUMMARY 02_07_2020.PDF
67 SE48_3115 MASS DEP DECISION OF SOC 1_29_20.PDF
68 SE48_3115 TON APPEAL SOC SBPF 02_11_20.PDF

LEC

WETLANDS WILDLIFE WATERWAYS

Notice of Intent Application

January 17, 2020

Subject Property
9 Lincoln Avenue
Map 30, Parcel 137
Nantucket, Massachusetts

Applicants/Property Owners
Nantucket Point of View, LLC
c/o John D. Flavin, AYCO
P.O. Box 860
Saratoga Springs, NY 12866

LEC Environmental Consultants, Inc.

12 Resnik Road, Suite 1
Plymouth, MA 02360
508-746-9491
508-746-9492 fax

www.lecenvironmental.com

January 17, 2020

Email/Overnight Mail

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent Application [LEC File #: BrEI\14-419.01]
9 Lincoln Avenue
Map 30, Parcel 137
Nantucket, Massachusetts

Dear Members of the Commission:

On behalf of the Applicant, Nantucket Point of View, LLC, LEC Environmental Consultants, Inc., (LEC) is submitting this Notice of Intent (NOI) Application for a proposed cottage/garage with appurtenances, relocated stairs and boardwalk, retaining wall, and Resource Area/Buffer Zone restoration/enhancement activities on the above-referenced subject parcel. Proposed work activities occur on a Coastal Bank, within Land Subject to Coastal Storm Flowage (LSCSF), and/or within the 100-foot Buffer Zone to Coastal Bank, LSCSF, and an Isolated Vegetated Wetland (IVW) protected under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations*. Details of the proposed project are depicted on the *Proposed Site Plan,* prepared by Bracken Engineering, Inc., dated January 15, 2020.

The following checks made payable to the Town of Nantucket are being hand-delivered to your office: Two Hundred, Sixty-Two Dollars and Fifty Cents ($262.50) for the town portion of the WPA filing fee; Two Hundred Dollars ($200.00) for the Town Consultant fee; and Twenty-Five Dollars ($25.00) for the *Bylaw* fee. A check made payable to *The Inquirer and Mirror* ($335.10) will also be submitted for the legal advertising fee. The state portion of the WPA filing fee ($237.50) has been forwarded to the DEP Lockbox.

Thank you for your consideration of this Application. We look forward to meeting with you at the February 5, 2020 Public Hearing to discuss the project further. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

LEC Environmental Consultants, Inc.

Brian T. Madden
Wildlife Scientist

cc: DEP SERO; Nantucket Point of View, LLC; The Garden Design Co.; Bracken Engineering, Inc.

i. WPA Form 3 – Notice of Intent
ii. WPA Appendix B – Wetland Fee Transmittal Form
iii. Affidavit of Service
iv. Letter to Abutters
v. Abutter Notification Form
vi. Certified List of Abutters

Wetland Resource Area Analysis and Report

1. Introduction 1

2. General Site Description 1
2.1 Flood Hazard Area Designation 1
2.2 Natural Heritage and Endangered Species Program Designation 2

3. Wetland Resource Area Descriptions 2
3.1 Coastal Bank 2
3.2 Land Subject to Coastal Storm Flowage 3
3.3 Isolated Vegetated Wetland 3

4. Proposed Project 4

5. Waiver Request 6

6. Summary 7

Literature Referenced

Appendices

Appendix A
Locus Maps
Figure 1: USGS Topographic Map
Figure 2: Aerial Orthophoto
Figure 3: FEMA Flood Insurance Rate Map
Figure 4: NHESP Map

Appendix B
Photographs

Appendix C
Site Plan & Stair Plan, Prepared by The Garden Design Co., dated January 15, 2020

Appendix D
Proposed Site Plan, Prepared by Bracken Engineering, Inc., Dated January 15, 2020

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
and the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NANTUCKET
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

9 Lincoln Avenue — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41°17'34.52" N — d. Latitude
70°06'25.24" W — e. Longitude

30 — f. Assessors Map/Plat Number
137 — g. Parcel /Lot Number

2. Applicant:

Nantucket Point of View, LLC — a. First Name
b. Last Name
c/o John D. Flavin, AYCO — c. Organization
P.O. Box 860 — d. Street Address
Saratoga Springs — e. City/Town
NY — f. State
12866 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Brian — a. First Name
Madden — b. Last Name
LEC Environmental Consultants, Inc. — c. Company
12 Resnik Road, Suite 1 — d. Street Address
Plymouth — e. City/Town
MA — f. State
02360 — g. Zip Code
508-746-9491 — h. Phone Number
508-746-9492 — i. Fax Number
bmadden@lecenvironmental.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$500.00 — a. Total Fee Paid
$237.50 — b. State Fee Paid
$262.50 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The Applicant is proposing to construct a cottage/garage with appurtenances; install a retaining wall; remove/ relocate a set of stairs & boardwalk; and restore/enhance the Coastal Bank, LSCSF, and/or Buffer Zone.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☒ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	26591
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☒ Coastal Banks	75± (restoration) 1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	6,032± 1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW | b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings | b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   8/1/17
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☒ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Proposed Site Plan	
a. Plan Title	
Bracken Engineering, Inc.	Alan M. Grady
b. Prepared By	c. Signed and Stamped by
1/15/2020	1"=20'
d. Final Revision Date	e. Scale
f. Additional Plan or Document Title	g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

9321	1/15/2020
2. Municipal Check Number	3. Check date
9324	1/15/2020
4. State Check Number	5. Check date
The Garden Design Co.	
6. Payor name on check: First Name	7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
and the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Robert D. Hardie 1. Signature of Applicant	1/13/20 2. Date
Bud Mahan 3. Signature of Property Owner (if different)	1/16/2020 4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

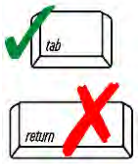
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

9 Lincoln Avenue	Nantucket
a. Street Address	b. City/Town
9324	$262.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Nantucket Point of View, LLC	
a. First Name	b. Last Name

c. Organization: c/o John D. Flavin; AYCO

d. Mailing Address: P.O. Box 860

Saratoga Springs	NY	12866
e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat 2: Single-family lot	1	$500.00	$500.00

Step 5/Total Project Fee: $500.00

Step 6/Fee Payments:

Total Project Fee:	$500.00 a. Total Fee from Step 5
State share of filing Fee:	$237.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$262.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

1. Introduction

On behalf of the Applicant, Nantucket Point of View, LLC, LEC Environmental Consultants, Inc., (LEC) is submitting a Notice of Intent (NOI) Application for a proposed cottage/garage with appurtenances, relocated stairs and boardwalk, retaining wall, and Resource Area/Buffer Zone restoration/enhancement activities. Proposed work activities occur on a Coastal Bank, within Land Subject to Coastal Storm Flowage (LSCSF), and/or within the 100-foot Buffer Zone to Coastal Bank, LSCSF, and an Isolated Vegetated Wetland (IVW) protected under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations*.

The following NOI Application provides a description of the existing site conditions, Wetland Resource Areas, and the proposed project designed to restore, enhance, and protect the interests and values of the Resource Areas identified within the above-referenced statutes. A Waiver is concurrently requested for the proposed project. Details of the proposed project are depicted on the *Site Plan & Stair Plan*, prepared by The Garden Design Co., dated January 15, 2020 (Appendix C) and the *Proposed Site Plan* prepared by Bracken Engineering, Inc., dated January 15, 2020 (Appendix D).

2. General Site Description

The 0.85± acre subject parcel is located within a moderately dense residential neighborhood south of Jetties Beach on Nantucket. The site maintains frontage along Lincoln Avenue to the west, Cobblestone Hill to the south, and Jefferson Avenue to the northeast. The property is currently improved by a single-family home, detached garage, and pool surrounded by lawn/landscaping located within the western/southwestern portion of the site. The structures are accessed via a shell driveway located off Lincoln Avenue. A moderately steep Coastal Bank separates the structures from a lower lawn area abutting Jefferson Avenue. A set of stairs extends down the Coastal Bank on the south side of the property, continuing out to Jefferson Avenue via an at-grade boardwalk.

2.1 Flood Hazard Area Designation

According to the June 9, 2014, Federal Emergency Management Agency Flood Insurance Rate Map for the Town of Nantucket (25019C0086G), Flood Zone AE (El. 8) extends

onto the northeastern portion of the subject parcel (Appendix A, Figure 3). Remaining portions of the subject parcel are located within Zone X, *Areas determined to be outside the 0.2% annual chance flood*.

2.2 Natural Heritage and Endangered Species Program Designation

According to the 14th edition of the Massachusetts *Natural Heritage Atlas* (effective August 1, 2017) published by the Natural Heritage & Endangered Species Program (NHESP), the project site does not occur within an Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species. No Certified or Potential Vernal Pools occur within the vicinity of the project site (Appendix A, Figure 4).

3. Wetland Resource Area Descriptions

Wetland Resource Areas located on or immediately off-site include Coastal Bank, Land Subject to Coastal Storm Flowage (LSCSF), and Isolated Vegetated Wetlands (IVW). A brief description of each Resource Area is provided below.

3.1 Coastal Bank

Coastal Bank is defined at (310 CMR 10.30 (2)) as *the seaward face or side of any elevated landform, other than a Coastal Dune, which lies at the landward edge of a Coastal Beach, land subject to tidal action, or other wetland.*

Coastal Bank is defined in the *Bylaw* (Section 1.02) as *the seaward face or side of any elevated landform, other than a Coastal Dune, which lies at the landward edge of a Coastal Beach, Coastal Dune, land subject to tidal action or coastal storm flowage, or other coastal wetland. Any minor discontinuity of the slope notwithstanding, the top of the bank shall be the first significant break in slope as defined by site specific topographic plan information, site inspection, wetland habitat evaluation, geologic origin, and/or relationship to coastal storm flowage. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, stone, or sand. A bank may be created by man and/or made of man-made materials. A bank may or may not contribute sediment to coastal dunes, beaches and/or to the littoral drift system. A bank may be significant as a major source of sediment, as a vertical buffer, for wildlife habitat and for wetland scenic views.*

Flood Zone AE (El 8) extends inland off Nantucket Harbor/Nantucket Sound, ultimately on-site and across to the lower lawn area, intercepting the slope within the eastern portion of the subject parcel. The slope is greater than 4:1, and therefore the top of the Coastal Bank is the distinct break where the slope becomes less than 4:1 per Figure 2 of DEP's *Wetlands Program Policy 92-1: Coastal Banks*. The upper portion of the Coastal Bank is occupied by a steep lawn area, transitioning to a vegetated Coastal Bank dominated by invasive or non-native species, most notably bush honeysuckle (*Lonicera* spp.), privet (*Ligustrum vulgare*), Asiatic bittersweet (*Celastrus orbiculata*), Japanese honeysuckle (*Lonicera japonica*), and black locust (*Robinia pseudoacacia*). Blackberry (*Rubus allegheniensis*) and Virginia creeper (*Parthenocissus quinquefolia*) vines also limit native species diversity, including individual black cherry (*Prunus serotina*) saplings encased by the aforementioned vines

3.2 Land Subject to Coastal Storm Flowage

LSCSF is defined at 310 CMR 10.04 as *land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, which ever is greater.*

LSCSF is contiguous with El. 8 per the June 9, 2014, Federal Emergency Management Agency Flood Insurance Rate Map for the Town of Nantucket (25019C0086G).

3.3 Isolated Vegetated Wetland

A vegetated Freshwater Wetland is defined within Section 1.02 of the Nantucket *Wetlands Protection Regulations* as a *wet meadow, freshwater marsh, swamp, bog, pond, lake, creek, or stream; an area of low topography where ground water, flowing water, standing surface water, or ice provides a significant part of the supporting substrate for a plant community for at least five months a year; characterized by emergent and submergent plant communities in inland waters; and/or where depth to high groundwater is within 18 inches of the ground surface, and/or exhibits hydric soil characteristics and includes that portion of any inland bank which touches any inland waters. Freshwater wetlands are not defined to include drainage facilities constructed to include wetland vegetation as treatment for stormwater runoff.*

The off-site IVW is vegetated by pussy willow (*Salix discolor*), winterberry (*Ilex verticillata*), bush honeysuckle, and poison ivy (*Toxicodendron radicans*). Interior portions of the IVW hold less than three inches of standing water during the spring hydroperiod or following significant rain events.

Additional IVW exists off-site to the east, across Jefferson Avenue.

4. Proposed Project

Proposed structural aspects of the project involve the installation of an 18”-30” high retaining wall east of the primary dwelling and upgradient of the Coastal Bank, construction of a guest cottage/garage within the easterly, lower lawn area, and relocation of stairs over the Coastal Bank and boardwalk within the Buffer Zone. As mitigation, the Applicant is proposing to restore and enhance the Coastal Bank and a significant portion of the 100-foot Buffer Zone to the toe of the Coastal Bank, IVW, and within LSCSF, as further described below.

The 18”-30” tall retaining wall is proposed to be installed upgradient of the top of the Coastal Bank within existing (historic) lawn area. Under existing conditions, the lawn extends east of the primary dwelling before steeply descending towards the current lawn edge, presenting a significant safety issue (see Photographs 1 & 2, Appendix B). With the installation of the retaining wall, existing lawn between the top of the Coastal Bank and vegetation edge will be revegetated with native species, as depicted on the *Site Plan*, prepared by The Garden Design Co., dated January 15, 2020 (Appendix C). The small retaining wall will serve to physically demarcate the limits of the lawn, while enabling 1,586± s.f. of existing lawn area to be converted to naturally-vegetated Coastal Bank conditions.

The existing stairs over the Coastal Bank and boardwalk within the Buffer Zone are proposed to be removed and relocated within the northern portion of the subject parcel. The relocated wooden stairs with hand rails will be 4-foot wide and elevated over the Coastal Bank and supported by 4x4 posts/concrete sonotube footings. Details are shown on the *Stair Plan*, prepared by The Garden Design Co., dated January 15, 2020 (Appendix C). The existing stairs will be disassembled by hand and properly disposed of off-site.

The relocated boardwalk will extend to the proposed 419± s.f. cottage/garage and associated decking within the eastern, lower lawn abutting Jefferson Avenue. The proposed cottage/garage will comply with building code requirements for construction within the Flood Zone (El. 8 / LSCSF). The second story (living level) will be well above El. 8, while the garage (under) will be constructed with flood vents. The structure will be accessed via a pervious driveway with a brick apron off Jefferson Avenue. The

cottage/garage will tie into existing sewer and water lines within Jefferson Avenue. No grading is proposed within the lower lawn area/LSCSF.

Concurrent with the structural project elements, the Applicant is proposing to restore and enhance the 6,200± s.f. Coastal Bank. The restoration effort is intended to promote the establishment of native vegetative cover and enhance conditions through invasive species management and a diversified revegetation plan. Best Management Practices (BMPs) will be implemented to remove the existing invasive species referenced above and protect the minimal native species (e.g., black cherry sapling). Invasive species will be removed by hand. Specifically, the invasive shrubs and vines will be uprooted as feasible or flush cut. Invasive black locust saplings will also be flush cut. All flush cut stumps/stems will be treated with a cut and wipe method of selective herbicide application (concentrated glyphosate or triclopyr-based herbicides) by a licensed pesticide applicator. All invasive vegetative material will be properly disposed of off-site and brought to the Madaket Solid Waste digester. Soil disturbance shall be kept to a minimum and biodegradable erosion control blankets will be utilized, as necessary, for slope stability.

Following initial invasive species management, native species will be planted within Coastal Bank restoration area (6,200± s.f.) and Buffer Zone/LSCSF located within the eastern portion of the site currently occupied by lawn (4,080± s.f.). The following native species are proposed to be planted: eastern red cedar (*Juniperus virginiana*), black cherry (*Prunus serotina*), sweet pepperbush (*Clethra alnifolia*), winterberry (*Ilex verticillata*), bayberry (*Myrica pensylvanica*), beach plum (*Prunus maritima*), highbush blueberry (*Vaccinium corymbosum*), and arrowwood (*Viburnum dentatum*). No cultivars are proposed. A native upland seed mix and plugs will also supplement the native woody plantings, as depicted on the *Site Plan*.

Proposed invasive species management and restoration/enhancement planting activity is proposed to be overseen by a qualified wetland scientist/biologist.

The restoration/enhancement areas are proposed to be monitored and managed with annual monitoring reports submitted to the Commission for three growing seasons to ensure successful restoration. BMPs will be implemented, as necessary, to ensure invasive species do not deter native plantings within the restoration/enhancement areas.

5. Waiver Request

The Applicant is respectfully requesting a Waiver under Section 1.03 F.3. a) & c) of the Nantucket *Wetlands Protection Regulations* for the retaining wall and cottage/garage located within 50 feet of the Coastal Bank, in addition to the proposed restoration/enhancement activities on the Coastal Bank and 25-foot Buffer Zone.

Section 1.03 F.3.a) states that *the Commission may grant a waiver from these regulations when the Commission finds that, given existing conditions, the proposed project will not adversely impact the interests identified in the Bylaw and there are no reasonable conditions or alternatives that would allow that project to proceed in compliance with the regulations.* Section 1.03 F.3.c) states that *the Commission may grant a waiver from these regulations when the Commission finds that a project will provide a long-term net benefit/improvement to the resource area, provided any adverse effects are minimized by carefully considered conditions.*

The proposed configuration and the location of the cottage/garage has been designed to minimize the footprint, maximize the setback to the toe of the Coastal Bank, and maintain the 50-foot setback to the off-site IVW, while complying with minimum zoning setbacks (e.g., ten feet side yard and five feet front yard). There are no alternative locations for the cottage/garage in consideration of these setbacks.

The 18”-30” tall retaining wall has been specifically located and designed to avoid impacts to the Coastal Bank, avoid regrading, and allow for the top of the Coastal Bank to be enhanced through native plantings.

Proposed new structures within the 50-foot Buffer Zone total 581± s.f. (127± s.f. retaining wall & 454± s.f. cottage/garage/deck) in comparison to the 11,866± s.f. of Resource Area/Buffer Zone restoration/enhancement.

As proposed, the cottage/garage and retaining wall are located entirely within existing lawn areas and will not have an adverse effect on LSCSF or the Coastal Bank. The on-site Coastal Bank is unique from other typical Coastal Banks considering the surrounding developed conditions and distance to Nantucket Sound and Nantucket Harbor that diminish its significance. The on-site Coastal Bank is approximately 1,100± feet from Nantucket Sound and 1,500± feet from Nantucket Harbor. The on-site Coastal Bank does not provide a sediment source and is discontinuous and fragmented in nature. Specifically, a Coastal Bank is not present south of Cobblestone Hill or further to the

north as the Flood Zone El. 8 does not intercept a slope of 10:1 or greater. The on-site discontinuous/fragmented Coastal Bank therefore only extends from Cobblestone Hill across the property.

Despite the Coastal Bank's discontinuous and fragmented nature, Resource Area interests will be protected and enhanced through the proposed BMPs and restoration activities. The ability of the on-site Coastal Bank to function for storm damage prevention and flood control will not be compromised with the retaining wall and cottage/garage constructed in compliance with Flood Zone building standards. Relocation of the elevated stairs and boardwalk have been designed in compliance with Coastal Bank performance standards and will provide for a greater, unfragmented Coastal Bank immediately north of Cobblestone Hill. The Coastal Bank and Buffer Zone restoration/enhancement activities will increase the land's ability to absorb and contain flood waters by creating a larger naturally-vegetated buffer to protect upland areas from storm damage, erosion, and flooding. Additionally, the native restoration/enhancement plantings will significantly improve wildlife habitat value and biodiversity that is currently diminished due to the extent of invasive species growth.

To reiterate, 1,586± s.f. of existing lawn area will be converted to naturally-vegetated Coastal Bank conditions, 6,200± s.f. of Coastal Bank will be restored/enhanced, and 4,080± s.f. of existing lawn area within the Buffer Zone to Coastal Bank and IVW will be naturally revegetated. As proposed, the project will provide a long-term net benefit/improvement to the on-site Resource Areas.

For these stated reasons, the Applicants are respectfully requesting a Waiver under Section 1.03 F.3. a) & c) of the Nantucket *Wetlands Protection Regulations* for the proposed project.

6. Summary

On behalf of the Applicant, Nantucket Point of View, LLC, LEC is submitting a NOI Application for Coastal Bank and Buffer Zone restoration/enhancement activities, construction of a cottage/garage with appurtenances, relocation of stairs/boardwalk, and installation of an 18"-30" retaining wall. Proposed work activities on/within Coastal Bank, Land Subject to Coastal Storm Flowage (LSCSF), and/or the 100-foot Buffer Zone to Coastal Bank, LSCSF, and IVW have been designed to protect and enhance the interests associated with these Resource Areas protected under the *Massachusetts*

Wetlands Protection Act (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations*. The overall project is proposed to avoid adverse impacts to the Resource Areas and provide a significant long-term net benefit/improvement to existing conditions.

Federal Emergency Management Agency Flood Insurance Rate Map, Town of Nantucket (25019C0086G) effective June 9, 2014.

https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Massachusetts Natural Heritage Atlas, 14th Edition. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Route 135, Westborough, MA 01581, http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm..

Massachusetts Wetlands Protection Act (M.G.L. c. 131, §. 40) and its implementing *Regulations* (310 CMR 10.00), www.state.ma.us/dep.

Sorrie, B. and Dunwiddie, P. 1996. *The Vascular and Non-Vascular Flora of Nantucket, Tuckernuck, and Muskeget Islands*. Massachusetts Audubon Society, Massachusetts Natural Heritage and Endangered Species Program, Nantucket Maria Mitchell Association, and The Natural Conservancy.

Town of Nantucket Bylaw (Chapter 136) and *Wetlands Protection Regulations*.

Appendix A

Locus Maps

Figure 1: USGS Topographic Map

Figure 2: Aerial Orthophoto

Figure 3: FEMA Flood Insurance Rate Map

Figure 4: NHESP Map

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 1: USGS Topographic Map

9 Lincoln Avenue
Nantucket, Massachusetts

N

December 17, 2019

LEC Environmental Consultants, Inc.

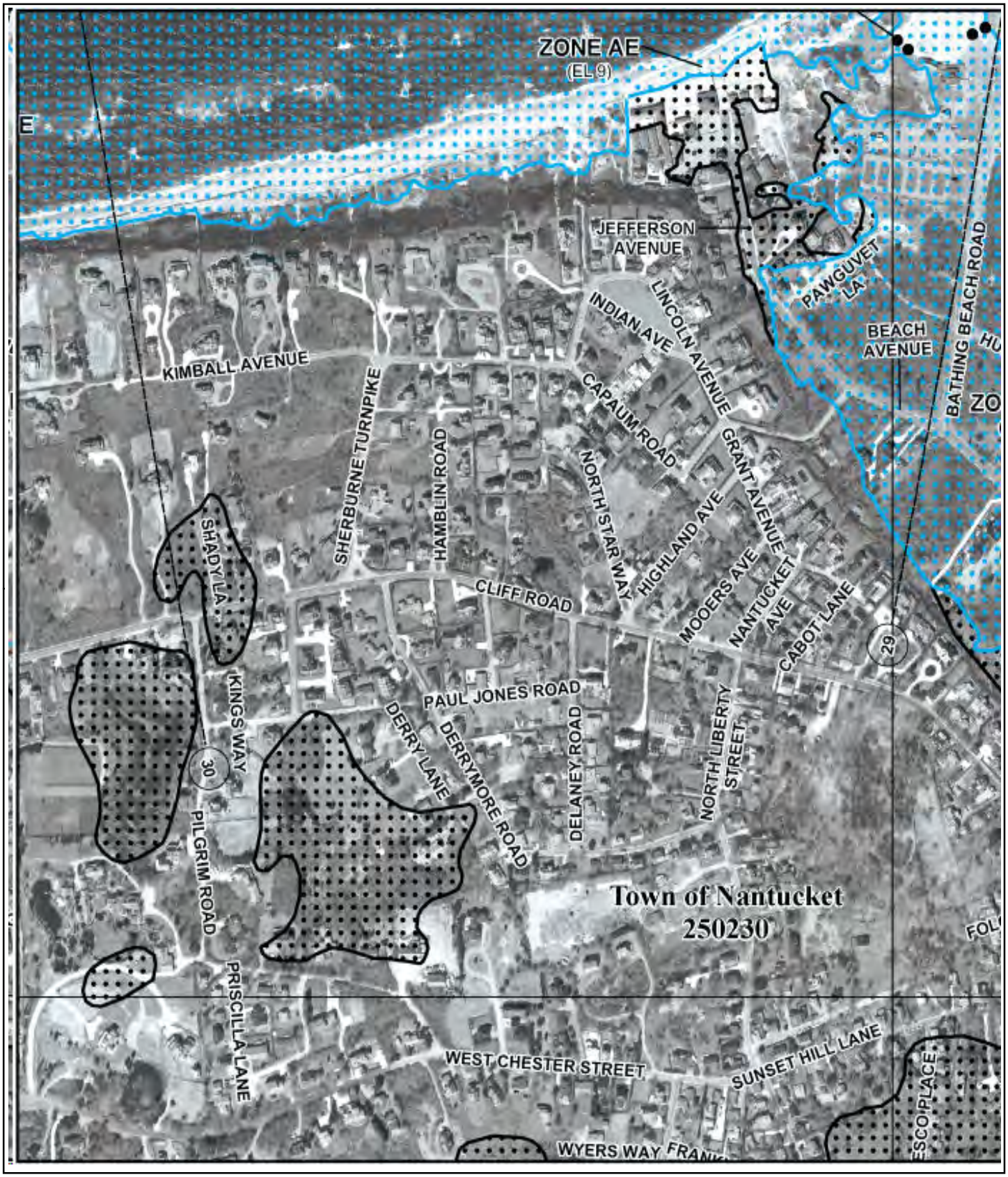
Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 2: Aerial Orthophoto Map

9 Lincoln Avenue
Nantucket, Massachusetts

N

December 17, 2019



LEC Environmental Consultants, Inc.

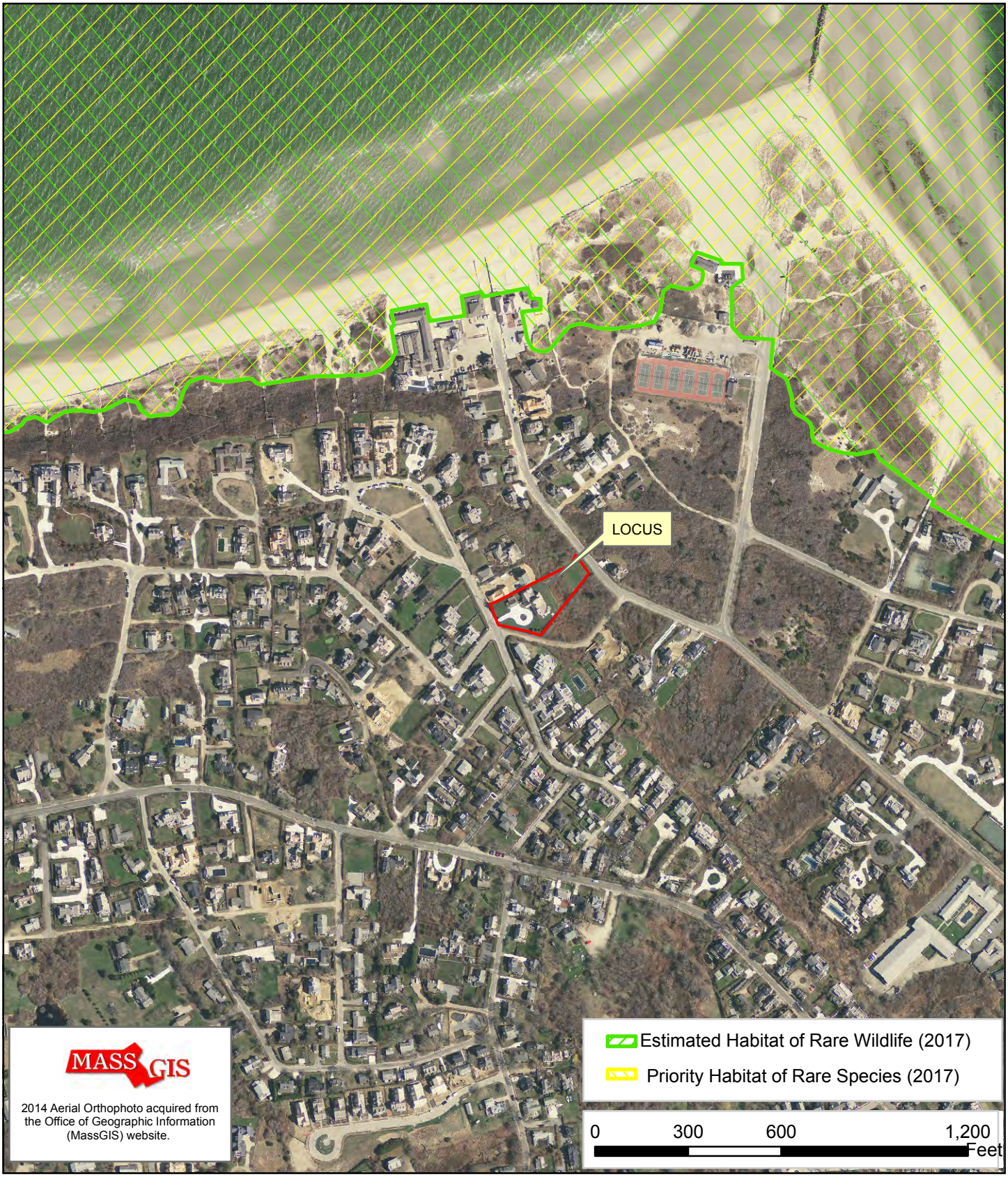
Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 3: FEMA Flood Insurance Rate Map

9 Lincoln Avenue
Nantucket, Massachusetts

N

December 17, 2019



LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 4: NHESP Map

9 Lincoln Avenue
Nantucket, Massachusetts

N

December 17, 2019

Appendix B

Photographs

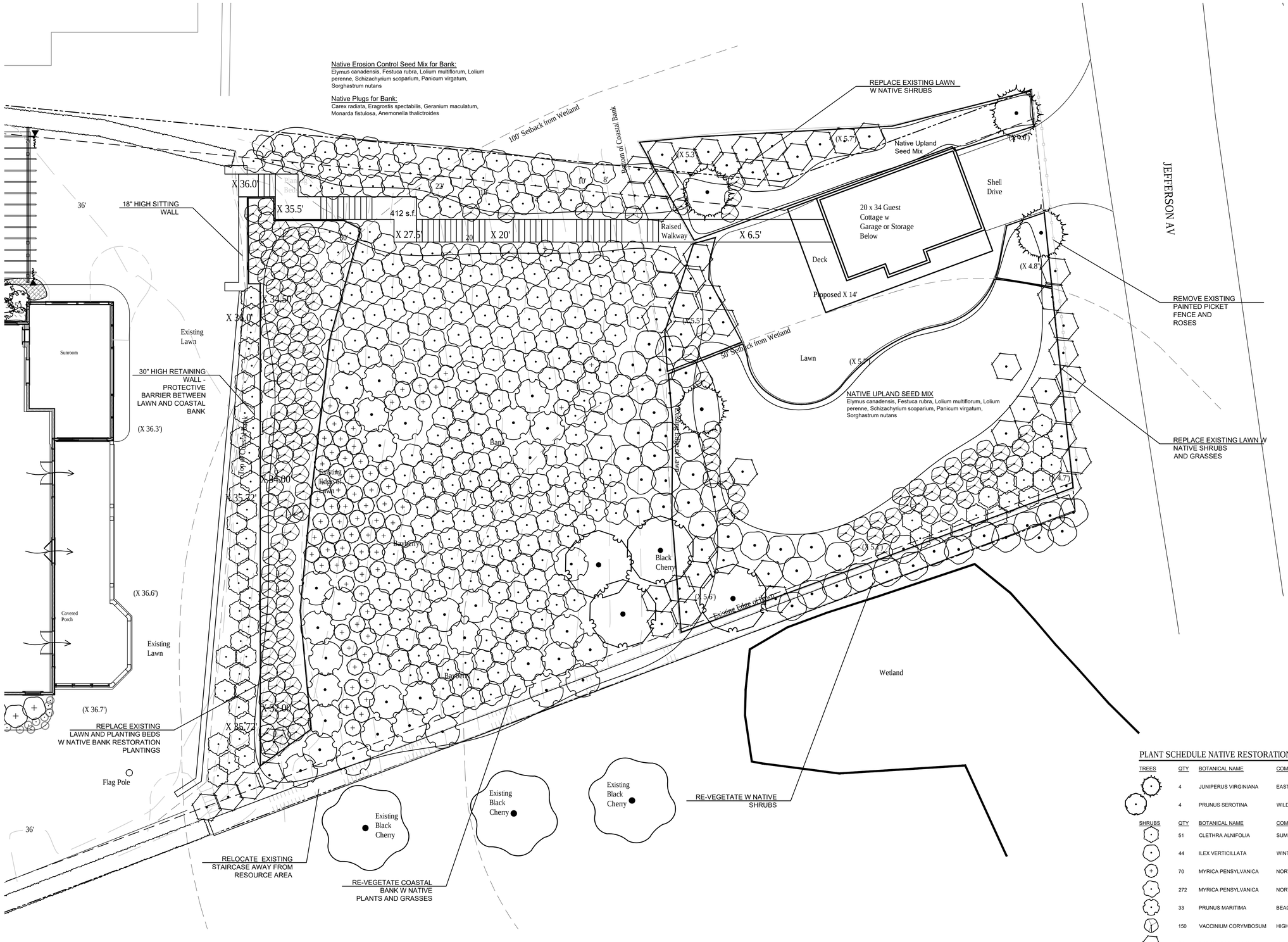
Photographs 1 & 2: Top of Coastal Bank comprised of lawn to be revegetated (8/2/18).

Photographs 3 & 4: Coastal Bank occupied by invasive species; to be restored, along with existing stairs (8/2/18).

Photographs 5 & 6: Proposed location of cottage/garage within lower lawn area and revegetation area (8/2/18).

Appendix C

Site Plan & Stair Plan, Prepared by The Garden Design Co., Dated January 15, 2020



PLANT SCHEDULE NATIVE RESTORATION

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT
	4	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	7-8` B&B
	4	PRUNUS SEROTINA	WILD BLACK CHERRY	5-6` B&B

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
	51	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	5 GAL
	44	ILEX VERTICILLATA	WINTERBERRY	4-5` B&B
	70	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	3 GAL.
	272	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	7 GAL
	33	PRUNUS MARITIMA	BEACH PLUM	10 GAL
	150	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	5 GAL.
	54	VIBURNUM DENTATUM	VIBURNUM	10 GAL.

JULIE JORDIN
THE GARDEN DESIGN COMPANY

SURVEYOR
Bracken Engineering
508.325.0044

ARCHITECT
Lyman Perry
508.228.3340

GENERAL NOTES

Drawing are based on plans provided by architects and surveyor. Please notify designer of any discrepancies.

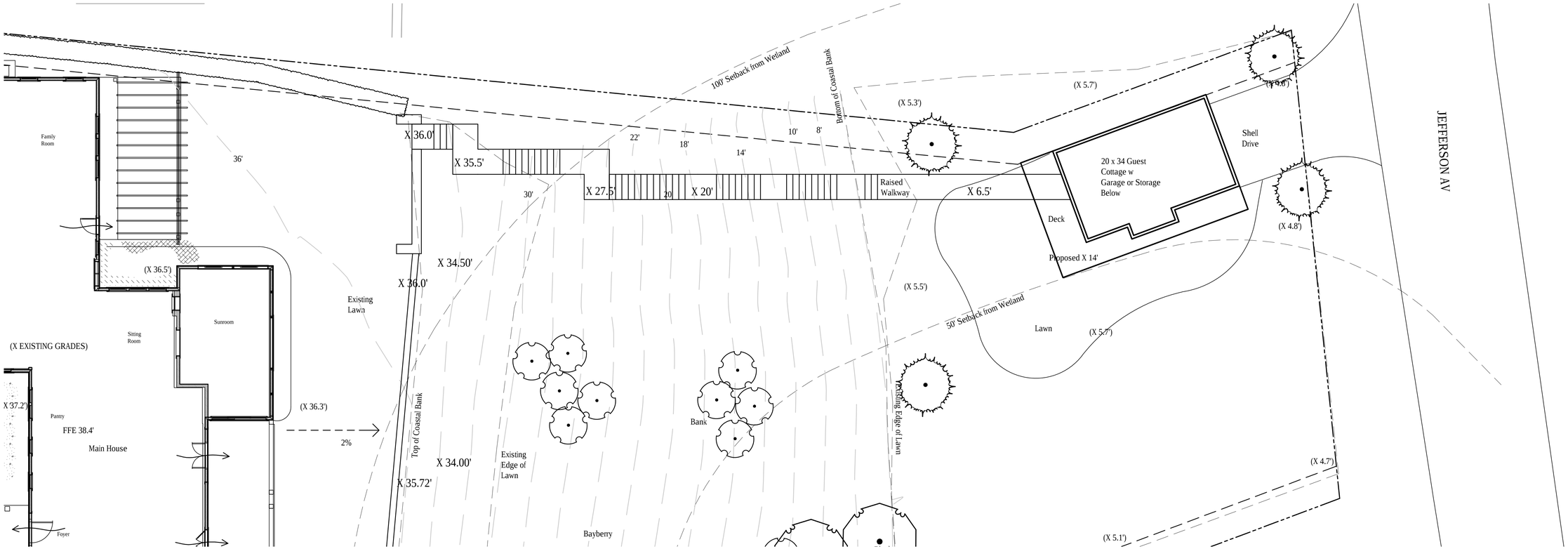
9 Lincoln Ave.
Nantucket, MA

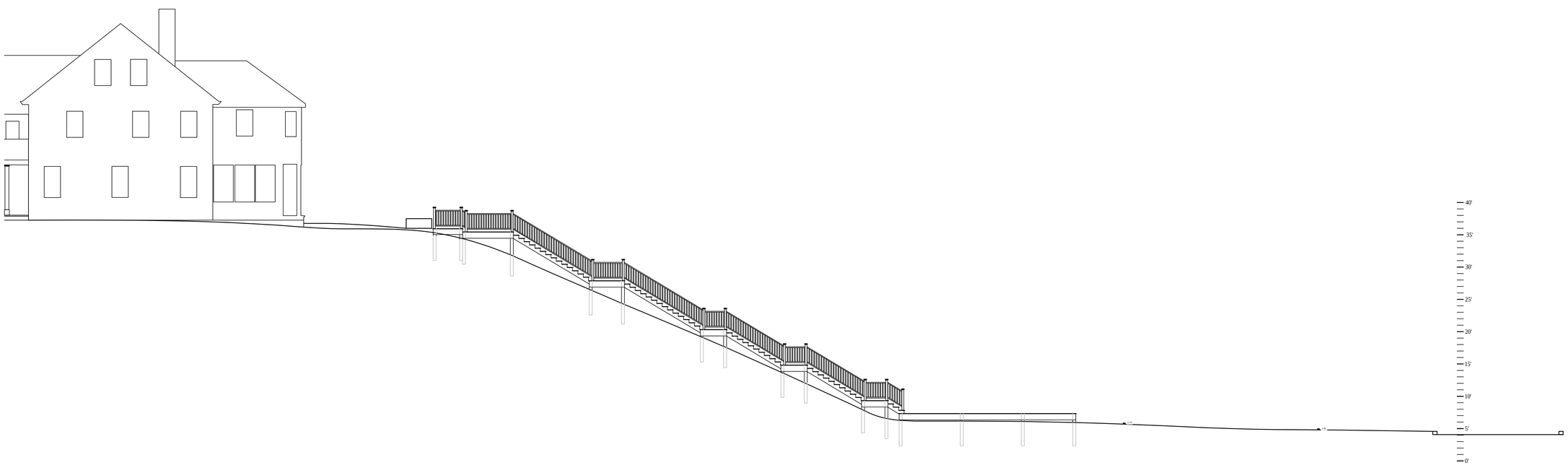
DATE: 1/15/20
SCALE: 1/8" = 1'
DRAWN BY: Julie Jordin
MAP/PARCEL: 30/137
ZONING: R1
REVISION:

L1.2
SITE PLAN

P.O. BOX 3153
NANTUCKET, MA 02583
508.325.4080
www.juliejordin.com

© 2016 The Garden Design Co.





JULIE JORDIN
THE GARDEN DESIGN COMPANY

SURVEYOR
Bracken Engineering
508.325.0044

ARCHITECT
Lyman Perry
508.228.3340

CONSTRUCTION NOTES

1. Drawing are based on plans provided by architects. Please notify designer of any discrepancies.
2. All work shall comply with state and local building codes and specifications; contractor responsible for obtaining all necessary permits.
3. Use landscape drawings in conjunction with architectural drawings.
4. Contractor shall verify all drawings for coordination between trades and report any discrepancies to landscape designer.
5. Contractor is responsible for constructing restrictive barriers for protection of tree roots and trunks.
6. All dimensions, spot grade elevations, and quantities are approximate.
7. Contractor to verify locations of all below grade utilities and structures before excavation.
8. Contractor to verify all dimensions in field and report any discrepancies to landscape designer.
9. All angles are assumed to be 90° unless otherwise noted.
10. Do not scale drawings.
11. Contractor to provide sleeving through all walls and beneath paving for utilities and drainage as required; allowance for subsurface drainage to be provided.
12. All dimensions given to top of wall unless otherwise noted.
13. All bottom of wall grades to be adjusted in field and approved by landscape designer.

9 Lincoln Ave.
Nantucket, MA

DATE: 1/15/20
SCALE: 1/8" = 1'
DRAWN BY: Julie Jordin
MAP/PARCEL: 30/137
ZONING: R1
REVISION:

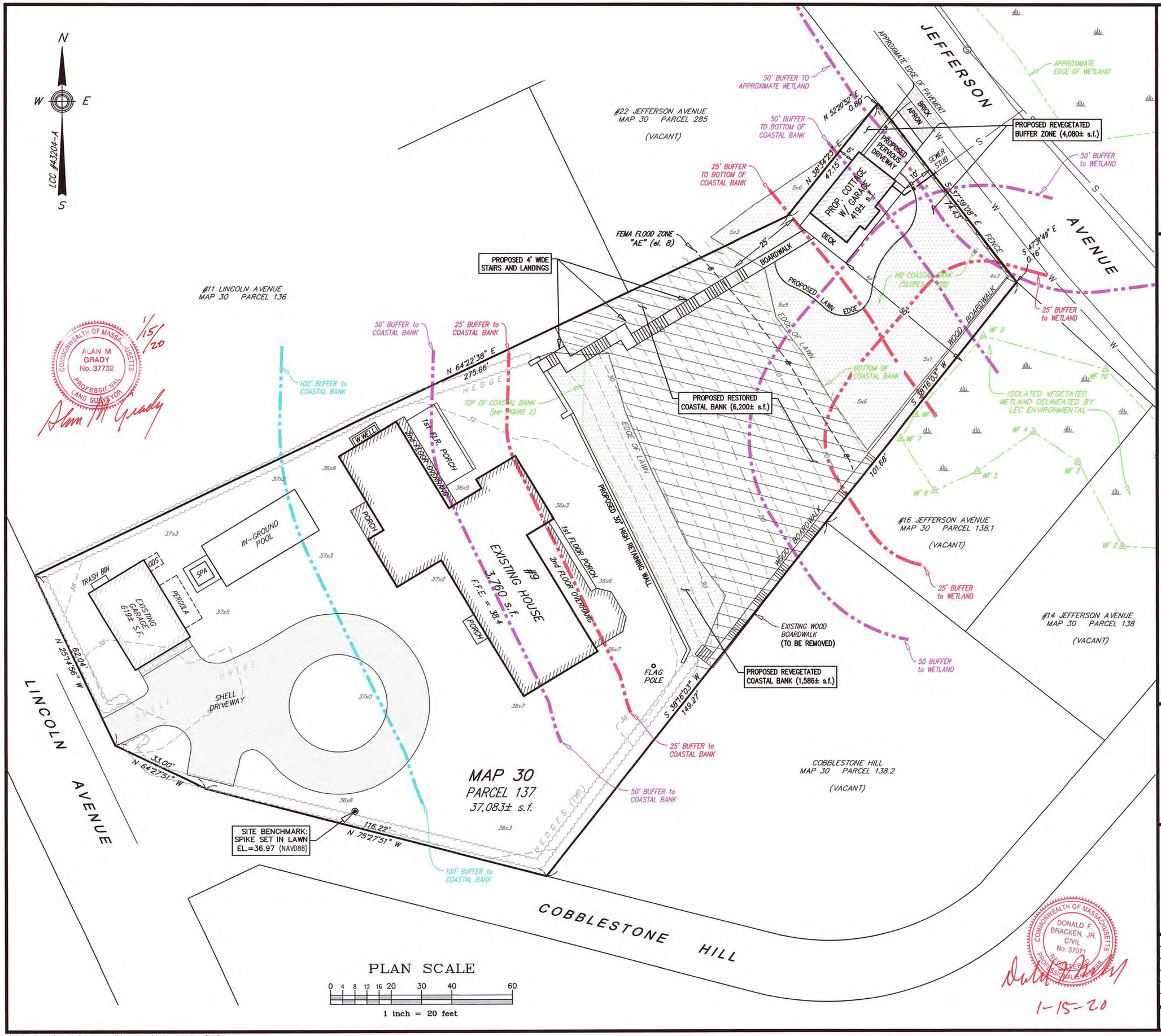
L3.2
STAIR PLAN

P.O. BOX 3153
NANTUCKET, MA 02583
508.325.4080
www.juliejordin.com

© 2016 The Garden Design Co.

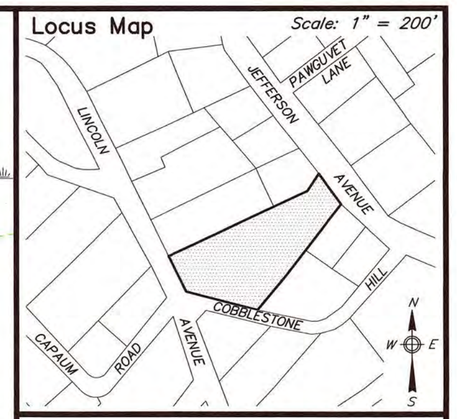
Appendix D

Proposed Site Plan, Prepared by Bracken Engineering, Inc., Dated January 15, 2020



Locus Map

Scale: 1" = 200'



NOTES:

1. LOCUS: #9 LINCOLN AVENUE
   MAP 30 PARCEL 137
2. OWNER: NANTUCKET POINT OF VIEW, LLC
   c/o JOHN D. FLAVIN, AYCO
   P.O. BOX 860
   SARATOGA SPRINGS, NY 12866
3. DEED REF: CERT #26591
4. PLAN REF: LCC #43204-A
5. LOCUS PARTIALLY FALLS WITHIN FLOOD HAZARD ZONE "AE (EL.8)" AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25019C-0086-G dated 06/09/2014.
6. LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE and ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE and PRIORITY HABITATS OF RARE SPECIES.

ZONE: R-1

REQUIRED

LOT AREA:	5,000 s.f.
FRONTAGE:	50'
FRONT YARD:	10'
SIDE/REAR YARD:	5'
GROUND COVER:	30% (MAX)

Prepared By:

BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282

19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

PROPOSED SITE PLAN
IN NANTUCKET, MASSACHUSETTS

Prepared For:

NANTUCKET POINT OF VIEW, LLC

#9 LINCOLN AVENUE
MAP 30 PARCEL 137

No.	Date	Revision Description	By
-	-	-	-

Date:	Drawn:	Checked:	Sheet:
JANUARY 15, 2020	RMM/ERC/BEI	DFB/AMG	1 of 1

S:\Autocad Drawings\Nantucket\Lincoln Avenue\9 Lincoln Ave\9 Lincoln Avenue - Site Plan.dwg

Joanne Dodd

From: Steven Cohen <steven@cohenlegal.net>
Sent: Monday, February 3, 2020 11:07 AM
To: Jeff Carlson; Joanne Dodd
Subject: 9 Lincoln NOI
Attachments: IMG_3276.jpg; IMG_3275.jpg

Jeff,
Please accept the following photographs as an addition to my prior filing.

1) The first is of the wetland across the street which appears to extend to the edge of pavement. As you can see, there was one orange wetland flag tied on a branch, so it may be that this has been flagged that way. If so, the 50-foot buffer zone would likely extend into the footprint of the proposed structure from that direction, which requires a request and a waiver that is not applied for or justified here.
2) The second shows that the bank is thickly vegetated with stable with mature vegetation. Even if some of the species are invasive, reworking the entire resource area to claim a benefit to justify waivers for new structures seems like a bit of a stretch in this case, and the applicant should not get credit for it in the way proposed. This is even more true with the reasonable alternative location for the structure.

Best,
Steven

STEVEN L. COHEN, ESQ.
PARTNER | COHEN & COHEN LAW PC
34 Main Street, 2nd Floor
Mail: Post Office Box 786
Nantucket, Massachusetts 02554
Tel. (508) 228-0337; Fax (508) 228-0970

Email: **STEVEN@COHENLEGAL.NET**
Visit: **COHENLEGAL.NET** | Connect on **LINKEDIN** | View my **BIO**

WIRE INSTRUCTIONS: To avoid cyber-fraud and wire-fraud, please confirm all wiring instructions to our office via phone at (508) 228-0337, especially if you receive an e-mail or notice purporting to change wiring instructions.

We do not accept or request changes to wiring instructions via e-mail or fax; always call to verify.

STATEMENT OF CONFIDENTIALITY: The information contained in this electronic message and any attachments to this message are intended for the exclusive use of the addressee(s) and may contain confidential or privileged information. If you are not the intended recipient, or the persons responsible for delivering the email to the intended recipient, be advised you have received this message in error and that any use, dissemination, forwarding, printing, or copying is strictly prohibited. Please contact Cohen & Cohen Law PC immediately at either (508) 228-0337 or Steven@Cohenlegal.net and destroy all copies of this message and any attachments. You will be reimbursed for reasonable costs incurred in notifying us.

Joanne Dodd

From: Steven Cohen <steven@cohenlegal.net>
Sent: Sunday, February 2, 2020 3:39 PM
To: Jeff Carlson; Joanne Dodd
Subject: 9 Lincoln NOI

Jeff,
I represents the property owners 11, 13, and 13A Lincoln Avenue, and at 22, 24, and 26 Jefferson Ave.
My clients are concerned about the NOI filed to do work at 9 Lincoln Avenue. We have the following notes and questions.

1) A 2' separation from ground water (or a waiver of such) is needed for the work in the buffer zone for the vegetated wetland to the east and north, but the Applicant has not provided information or data on the ground water level and has not requested this waiver. Applicant should provide the data forms for wetland delineation and provide ground water information. It is unlikely that the footings will be compliant without a waiver, for example.
2) The wetland to the north, across the street, is shown as "approximate location" and no delineation has been done. Since the structure is close to the 50' buffer, an actual delineation should be done.
3) There is work proposed within 25' of the buffer zone for the vegetated wetland. This needs a waiver that is not requested or justified.
4) The application does not address that the garage apartment is a new impervious surface with new run-off.
5) No construction methodology was provided and no dewatering plan was provided. How are they protecting the wetlands and what are they doing with the water?
6) It is not stated whether the sewer connection is an existing stub or just proposed. If it needs to be installed, that involves a lot of trenching within the 25' buffer, with no data provided, and no mitigation plan provided.
7) The applicant proposes significant revegetation, but the value of some of it is questionable as a benefit here. For example, the revegetation of the coastal bank requires clear-cutting and denuding it, and the revegetation of the buffer area requires use of herbicides.
8) The retaining wall is not justified or necessary. The issue of "safety" is not applicable, or accurate, and it could easily be addressed with a split rail fence or similar without building a wall and putting fill at the top of the bank.
9) The structure will impact wetland scenic views but no information is provided about its height, massing, color, or other materials. The wetlands at the base of the bank should not be overly interrupted, nor should the view of the bank itself. The structure, if allowed, should be minimal in its impact on such views. For example, it could be limited to a single story building with a minimal height adjustment for flood rules. That is, this building could be less than 15' tall and does not need to be 30' tall, if allowed.
10) The second curb cut on Jefferson Avenue will require a Planning Board permit, which has not been applied for yet. The factors in that permit focus on traffic safety, which means that the Planning Board is likely to require an on-site turn around to prevent backing out into the road, if the permit is granted. An on-site turn around would require much more impervious surface in the buffer zone. Therefore, the application is not realistic in a way that skews the disturbance/mitigation numbers.
11) Some of the waivers here require a showing of no reasonable alternative and no adverse impact. The project will have an adverse impact (work in buffer zone, use of herbicides, dewatering), and there is plenty of room for the structure in the southern and western portion of their lot, toward Lincoln Avenue, which is outside of the 50' buffer and even outside of the 100' buffer. There is no right, need or justification for waivers to locate the structure on the north and east portion of the lot.
12) The new stairs are wider and more structure than the existing ones, and there is no need to replace them. Removing and replacing it will impact the bank and should wait for a need to do so, or should be justified by some greater need.

We trust that the Commission will give this application the appropriate review and attention.

Best,
Steven

STEVEN L. COHEN, ESQ.
PARTNER | COHEN & COHEN LAW PC
34 Main Street, 2nd Floor
Mail: Post Office Box 786
Nantucket, Massachusetts 02554
Tel. (508) 228-0337; Fax (508) 228-0970

Email: **STEVEN@COHENLEGAL.NET**
Visit: **COHENLEGAL.NET** | Connect on **LINKEDIN** | View my **BIO**

WIRE INSTRUCTIONS: To avoid cyber-fraud and wire-fraud, please confirm all wiring instructions to our office via phone at (508) 228-0337, especially if you receive an e-mail or notice purporting to change wiring instructions.

We do not accept or request changes to wiring instructions via e-mail or fax; always call to verify.

STATEMENT OF CONFIDENTIALITY: The information contained in this electronic message and any attachments to this message are intended for the exclusive use of the addressee(s) and may contain confidential or privileged information. If you are not the intended recipient, or the persons responsible for delivering the email to the intended recipient, be advised you have received this message in error and that any use, dissemination, forwarding, printing, or copying is strictly prohibited. Please contact Cohen & Cohen Law PC immediately at either (508) 228-0337 or Steven@Cohenlegal.net and destroy all copies of this message and any attachments. You will be reimbursed for reasonable costs incurred in notifying us.

NOTICE OF INTENT
for
HOUSE ADDITION
at
49 MILLBROOK ROAD
NANTUCKET, MASSACHUSETTS

Prepared for:

SUZANNE KELLER & ANDREW BENNETT
P.O. BOX 1333
NANTUCKET, MA 02554

January 2020

Prepared by:

HAINES HYDROGEOLOGIC CONSULTING
141 OLD ENFIELD ROAD
BELCHERTOWN, MA 01007

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

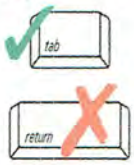
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

49 Millbrook Road — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41.277046N — d. Latitude
70.124636W — e. Longitude

56 — f. Assessors Map/Plat Number
241 — g. Parcel /Lot Number

2. Applicant:

Suzanne/Andrew — a. First Name
Keller/Bennett — b. Last Name
c. Organization
P.O. Box 1333 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Same — a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

David — a. First Name
Haines — b. Last Name
Haines Hydrogeologic Consulting — c. Company
141 Old Enfield Road — d. Street Address
Belchertown — e. City/Town
MA — f. State
01007 — g. Zip Code
413-323-7156 — h. Phone Number
i. Fax Number
haineshydro@gmail.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$110.00;$25.00;$200.00 — a. Total Fee Paid
$42.50 — b. State Fee Paid
$67.50;$25.00;$200.00 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The project involves the construction of an addition, on an existing house, in the 100-foot Buffer Zone to an Isolated Wetland.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☒ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	15841
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☒ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	**Proposed Replacement (if any)**
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW _____ b. square feet of Salt Marsh _____

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☐ Yes ☒ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

2017
b. Date of map

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No — If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☒ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☐ List the titles and dates for all plans and other materials submitted with this NOI.

Site Plan to Accompany a Notice of Intent for Suzanne Keller& Andrew Bennett
a. Plan Title

Michael Connolly & Associates
b. Prepared By

Michael Connolly
c. Signed and Stamped by

1/14/20
d. Final Revision Date

1"=30'
e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

3257
2. Municipal Check Number

1/15/20
3. Check date

3256
4. State Check Number

1/15/20
5. Check date

Michael Connolly & Associates
6. Payor name on check: First Name

7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

REP 1. Signature of Applicant	1/16/2020 2. Date
REP 3. Signature of Property Owner (if different)	1/16/2020 4. Date
HMWRS Hydrogeologic Consult 5. Signature of Representative (if any)	1/16/2020 6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

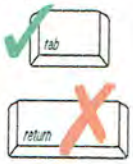
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

49 Millbrook Road a. Street Address	Nantucket b. City/Town
3256 c. Check number	$42.50 d. Fee amount

2. Applicant Mailing Address:

Suzanne/Andrew a. First Name	Keller/Bennett b. Last Name

c. Organization

P.O. Box 1333
d. Mailing Address

Nantucket e. City/Town	MA f. State	02554 g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

Same a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Addition to Existing Single Family House	1	$110.00	$110.00
Nantucket Wetlands By-law Fee	1	$25.00	$25.00
Nantucket Technical Review Fee	1	$200.00	$200.00

Step 5/Total Project Fee: $110.00;$25.00: $200.00

Step 6/Fee Payments:

Total Project Fee:	$110.00;$25.00; $200.00
State share of filing Fee:	$42.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$67.50;$25.00;$200.00 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

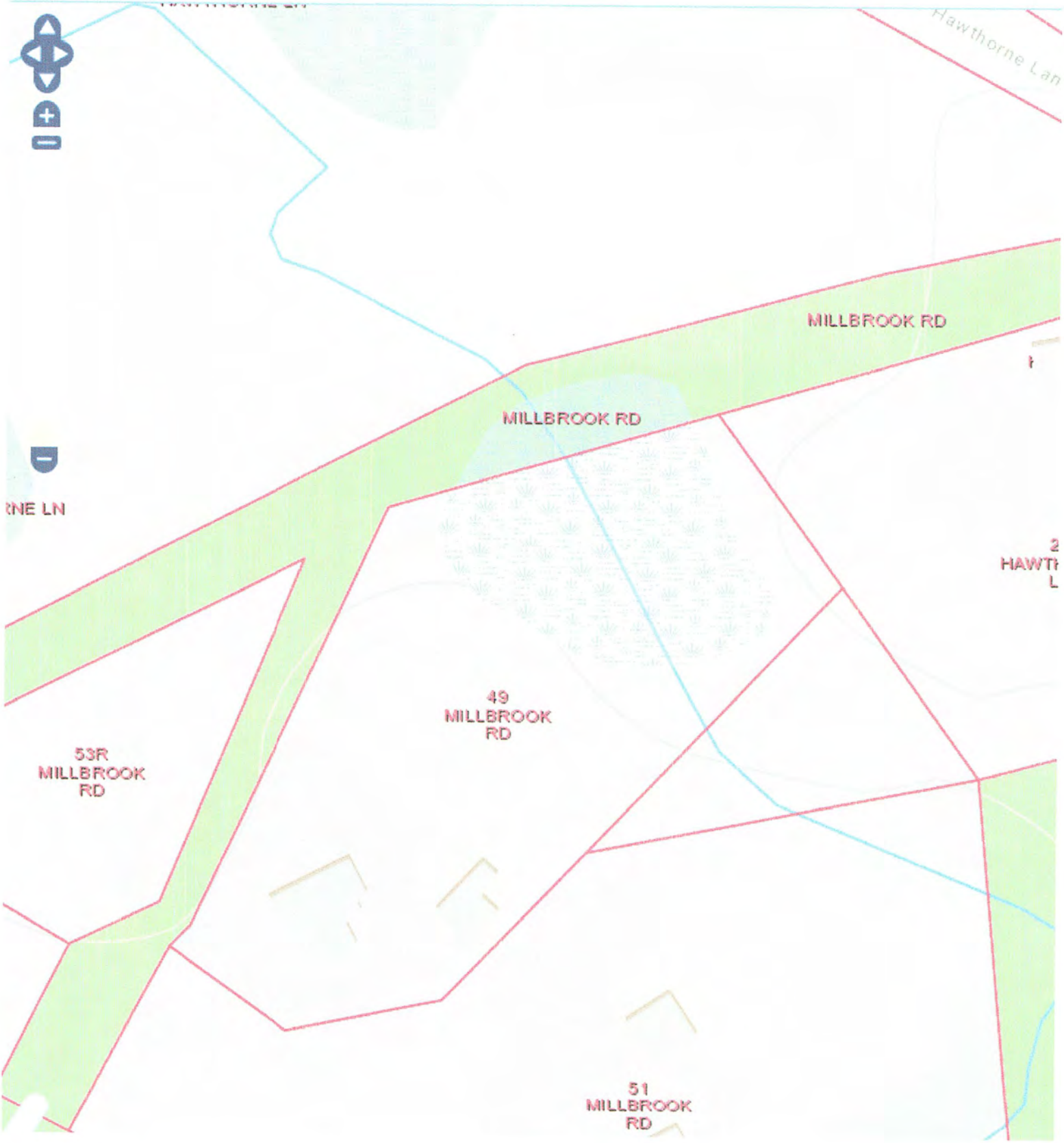
To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

LOCUS MAP
49 Millbrook Rd
USGS NANTUCKET QUAD
1979 1:25000

OLIVER: MassGIS's Online Mapping Tool OLIVER Updates

Search for a location

Zoom to a town



Town and County of Nantucket, MA

Property

Share Print Property Quick Search

INTRODUCTION

The proposed work at 49 Millbrook Road in Nantucket, Massachusetts includes construction of an addition onto an existing house, and associated landscaping. The work will occur within the **100-foot Buffer Zone** to an **Isolated Vegetated Wetland**. All existing undisturbed vegated buffers will be maintained. No new structures are proposed within the 50-foot setback. The proposed slab foundation is greater than two feet from the water table and therefore does not require waivers from the *Nantucket Wetlands By-law*.

The site is near but not within any endangered species habitats as mapped by the *Massachusetts Natural Heritage and Endangered Species Program* (NHESP) (2017); therefore, no review by NHESP is required.

SITE DESCRIPTION

The site consists of a single lot totaling 1.28 acres located at 49 Millbrook Road in Nantucket. The site contains a house, shop, shed, lawn, driveway, well, septic system and naturally vegetated areas. The lot is serviced by an on-site well and on-site septic system. The site has a rolling topography with the house located on the highest portion of the lot. The land drops off to a **Bordering Vegetated Wetland** in the northern portion of the lot and to the northwest and southeast to off-site **Isolated Vegetated Wetlands**. The resource areas on or adjacent to the site consist of **Bordering Vegetated Wetland**, **Isolated Vegetated Wetland** and the associated **100-foot Buffer Zone**.

The **Bordering Vegetated Wetlands** on the site are comprised of shrub swamp located in the northern portion of the lot. The boundary of the wetlands was delineated with numbered flags by using the three technical criteria of vegetation, soils and hydrology, and is shown on the site plan. The vegetation in the wetlands includes Winterberry Holly, Highbush Blueberry, Arrowwood, Cinnamon Fern and sedges. The soils in the wetland range from seasonally saturated dark brown sandy loam over mottled sandy loam to saturated muck over gleyed subsoil. No work is proposed in this resource area.

There are two **Isolated Vegetated Wetlands** within 100 feet of the site on adjacent lots. These isolated wetlands were flagged by LEC for the adjacent property owners. We reviewed and agreed with the delineation.

These are also shrub swamps containing Winterberry Holly, Highbush Blueberry and Arrowwood. The **100-foot Buffer Zone** from the southeastern wetland extends to the work zone. No work is proposed in the buffer zones to the other two wetlands.

The **100-foot Buffer Zone** to the **Bordering Vegetated Wetlands** and the **Isolated Vegetated Wetlands** extends over most of the site. The proposed work will occur in the **Buffer Zone** to one of the southeastern off-site vegetated wetlands. The work will be greater than 50 feet from the wetland boundary and will be separated from the wetland by the existing driveway. The work in this area will be done in such a manner as to not impact the adjacent resource areas.

A review of the 2017 *Massachusetts Natural Heritage Atlas*, prepared by NHESP, indicates that the work area is near but not within the estimated known range of Rare Wetland Wildlife or Priority Habitats.

WORK DESCRIPTION

The proposed work at 49 Millbrook Road in Nantucket, Massachusetts includes the construction of an addition onto an existing house, and associated landscaping. The work will occur within existing landscaped area.

Prior to the commencement of work, a silt fence will be installed at the limit of work as shown on the plan and a "Start Work Form" must be submitted to the Conservation Commission. An additional 100 feet of silt fence will be on site for repairs and emergencies. This barrier will be inspected and maintained until all work has been completed and the site has stabilized.

All work will be performed as shown on the site plan titled "Site Plan to Accompany a Notice of Intent Prepared for Suzanne Keller and Andrew H. Bennett", prepared by Micheal Connolly and Associates, 1/14/20.

The addition will be outside the 50-foot wetland setback and over existing landscaped area. The foundation for the addition will be a slab with footings. Based on test pit observations, the water table is at an elevation of 12.3 ft. NAVD88. The addition will be at approximately elevation 24 ft. NAVD88; therefore, the footings of the slab will be greater than two feet above the water table and no waiver will be required. Based on test pit information, no temporary or permanent dewatering will be required. No significant regrading will be necessary.

Incidental landscaping around the addition will include planting of shrubs and reestablishment of lawn.

No new fertilizer or irrigation will be used within the **100-foot Buffer Zone**.

All disturbed areas will be stabilized with lawn and seed or shrubs. The success of the stabilization will be monitored and adjustments will be made as needed until complete stabilization has been achieved.

CONCLUSION

The proposed work at 49 Millbrook Road in Nantucket, Massachusetts includes the construction of an addition to an existing house, and associated landscaping. The addition will be built on a slab with shallow footings, over existing lawn, outside the 50-foot no-structure setback. The footings for the foundation will be greater than two feet from the water table and therefore a waiver from the *Nantucket Wetlands By-law* is not required. The site is near but not within a mapped NHESP habitat; therefore, no review by NHESP is required. The work as proposed will not adversely impact the resource areas.

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Keller & Bennett Prepared by: Haines Hydrogeologic Consulting Project location: 49 Millbrook Rd Rd DEP File #: _____
Nantucket, MA

Check all that apply:

- X Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☐ Vegetation and other indicators of hydrology usedto delineateBVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I.

15 feet below flag #4

Vegetation	Observation Plot Number: #4 Wet		Transect Number: #4	Date of Delineation: 12/18/19
A. Sample Layer & Plant Species (by common/scientific name)	B. Percent Cover (or basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Winterberry Holly	20.5	33%	Yes	Facw+
Highbush Blueberry	20.5	33%	Yes	Facw-
Northern Arrowwod	10.5	16%	No	Fac
Swamp Azalea	10.5	16%	No	Obl
Cinnnamon Fern	20.5	67%	Yes	Facw
Jewelweed	10.5	33%	Yes	Facw
Sedge	10.5	20%	Yes	Facw
Soft Rush	10.5	38%	Yes	Facw+

* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation conclusion:

Number of dominant wetland indicator plants: 6 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? **YES** no

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Keller & Bennett Prepared by: Haines Hydrogeologic Consulting Project location: 49Millbrook Rd DEP File #:_____
Nantucket, MA

Check all that apply:

- X Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☐ Vegetation and other indicators of hydrology usedto delineateBVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I.

15 feet above Flag # 4

Vegetation	Observation Plot Number: #4 Up		Transect Number: #4	Date of Delineation: 12/18/19
A. Sample Layer & Plant Species (by common/scientific name)	B. Percent Cover (or basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Black Cherry	38.0	78%	Yes	FacU
Scrub Oak	10.5	21%	Yes	Facu
Fire Cherry	20.5	100%	Yes	FacU
Tartarian Honeysuckle	10.5	33%	Yes	FacU
Bayberry	10.5	33%	Yes	Fac
Bramble	10.5	33%	Yes	FacU-
Fox Grape	10.5	100%	Yes	FacU
Goldenrod spp	10.5	50%	Yes	??

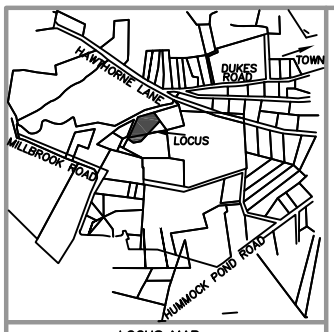
* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants: 6

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? yes **NO**

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent



LOCUS MAP

APPROX. GROUNDWATER FLOW
AS PER H.W.H. INC.
1990 MAP 2

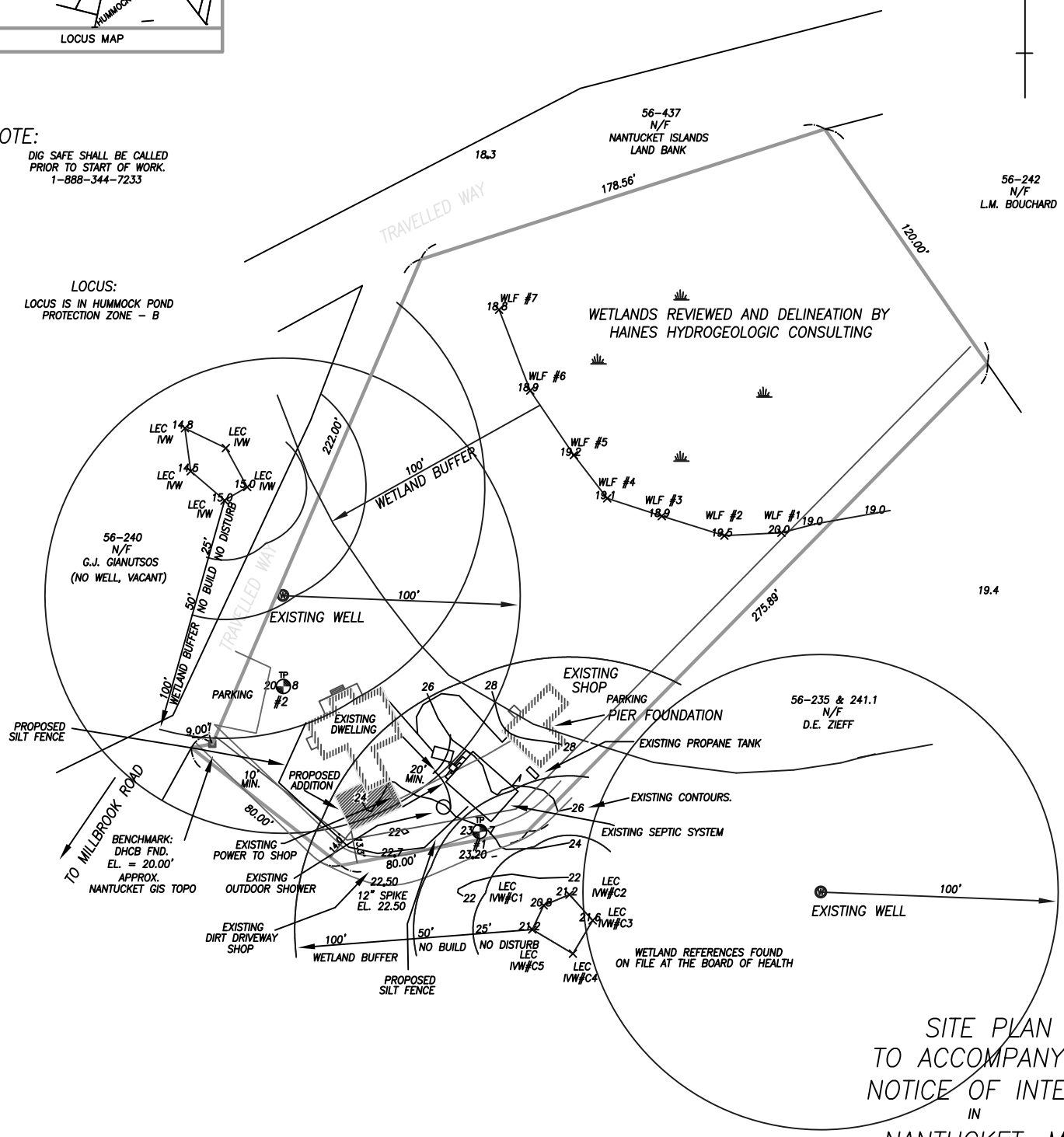
ZONING CLASSIFICATION: LUG-1

		EXISTING:
MIN. AREA:	40,000 S.F.	55,746±S.F.
MIN. FRONTAGE:	100 FT.	SEE PLAN
FRONT YARD S.B.:	35 FT.	SEE PLAN
SIDE S.B.:	10 FT.	SEE PLAN
REAR S.B.:	10 FT.	SEE PLAN
GROUND COVER (%):	7 %	SEE PLAN

N

NOTE:
DIG SAFE SHALL BE CALLED
PRIOR TO START OF WORK.
1-888-344-7233

LOCUS:
LOCUS IS IN HUMMOCK POND
PROTECTION ZONE - B



SITE PLAN
TO ACCOMPANY A
NOTICE OF INTENT
IN
NANTUCKET, MA.

49 MILLBROOK ROAD
ASSESSOR MAP 56 PARCEL 241

SCALE: 1"=30' DATE: JANUARY 14, 2020

OWNER'S REFERENCE:
SUZANNE KELLER & ANDREW H. BENNETT
CERT. 15,841
L.C. 14899-J, LOT 11
L.C. 14899-K, LOT 13

LOT AREA = 55,746±S.F.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

MICHAEL CONNOLLY & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
150 SURFSIDE ROAD
NANTUCKET, MA. 02554
(508) 228-8910

C-4534

Town of Nantucket

Natural Resources Department

NOTICE OF INTENT APPLICATION

Dune stabilization Project Adjacent to Millie's Bridge

At

Alabama Ave & 4 California Ave

January 2020

Prepared by Vincent Murphy, Coastal Resilience Coordinator

2 Bathing Beach Road, Nantucket MA, 02554 (508) 228-7230

Town of Nantucket

Natural Resources Department

Location Map
Town and County of Nantucket

Property ID 60.2.4 53 & 60 132 **Location** Alabama Av & 4 California Ave Owner Town of Nantucket	**Map for reference only.** **Map accessed 01/10/2020**

Town of Nantucket

Natural Resources Department

January 10, 2020

Ashley Erisman, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent
Dune Stabilization Project Adjacent to Millie's Bridge
California Ave & Alabama Ave
Map 60.2.4 Parcel 53 & Map 60 Parcel 132

Dear Ms. Erisman,

Please accept the enclosed Notice of Intent and supporting documents for review. In collaboration with the Nantucket Conservation Foundation (NCF), the Town of Nantucket's Natural Resources Department's Coastal Resilience Coordinator has developed a dune stabilization project near Millie's Bridge in Madaket to preserve the ecological function of existing resource areas. The project area is located entirely within the ownership of the Town of Nantucket.

Background and justification

Please see the Project Description in Appendix A for detailed justification, objectives, methodology and timelines. This area suffered a substantial washover event during a storm in October 2017. Storm waters washing from the ocean side eroded the dune separating Millie's Pond from the ocean. The eroded dune sand was deposited on top of the bordering vegetated wetland and salt marsh surrounding Millie's Pond as well as infilling a significant portion of the pond. These resources areas were altered by a natural process into Coastal Dunes. Coastal dune vegetation has recolonized the area but only in low density. Planting the area with vegetation representative of the surrounding habitats would stabilize the dune area. There are additional benefits in this planting in terms of coastal resilience. Holding the extra height of sand with vegetation is a form of green infrastructure to prevent Hither Creek from connecting to the ocean in the near future. It may also reduce loss of this sand which potentially increases sand capture and dune building processes.

Resource Areas and Waiver Request

The project area is entirely with resource area defined as **coastal dune** coastal wetland resource areas under 310 CMF 10.28 (2) as *any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash.* Due to the nature of this project, the stabilization of the coastal dune will meet the performance standards at 310 CMR 10.28 (5)(c) *plantings compatible with the natural vegetative cover.*

The resource area is identified as coastal dune (section 2.03) and Land subject to coastal storm flowage (2.10). The Town of Nantucket requests a waiver from Section 2.03 (B)(2) which requires that all non-water dependent projects be at least 25 feet from the resource area. This project will take place entirely with the resource area. This project will provide a "long tern net benefit/improvement to the resource area" through revegetation using native vegetation intended to enhance the ability of the coastal dune to "aid in storm damage prevention, erosion and flood control; protect land in coastal areas from storm damage, serve to provide wildlife habitat and provide important wetland scenic views." Therefore, this project requests a waiver be issued under Section 1.03(F) (a) and (c) of the Nantucket Wetland Regulations.

The proposed project takes place entirely within the resource area hence the Commission is not asked to verify the boundary of the resource area.

The only potential negative or unknown part of this project, is how long it will be effective for before it will be washed over again or eroded. It is hoped that this will be a remedial effort to mitigate erosion in this area in the medium term. A long-term solution may be developed as part of the Coastal Resilience Plan currently being tendered by the Town of Nantucket.

Work description

The planting effort is planned to be undertaken in spring 2020. The planting area is in dunes between the Ocean and Hither Creek. The planting will be undertaken by hand and using volunteers. Holes for the Beach grass plugs will only be a few inches deep. Holes for the bare root vegetation will only be about 6-8 inches deep. Only the surface layer of sand will be disturbed, which in turn will limit any potential soil runoff to either waterbody. Planting should take 1-2 days, depending on the number of volunteers. As described in the attached plan, post planting monitoring will be undertaken.

Additional information

Mass DEP were contacted to inquire if this project should be undertaken as part of an Ecological Restoration Limited Project as described in 310 CMR 10.04 given its location and proximity to a number of resource areas. The consensus is that it is not required (Appendix B).

Sincerely,

Vincent Murphy

Coastal Resilience Coordinator.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

4 California Ave & Alabama Ave. — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41°16'17.6"N — d. Latitude
70°12'16.5"W — e. Longitude
60 ; 60.2.4 — f. Assessors Map/Plat Number
132 ; 53 — g. Parcel /Lot Number

2. Applicant:

Vincent — a. First Name
Murphy — b. Last Name
Natural Resources Department, Town of Nantucket — c. Organization
2 Bathing Beach Road — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
5082287260 — h. Phone Number
i. Fax Number
vmurphy@nantucket-ma.gov — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
Town of Nantucket — c. Organization
16 Broad Street — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
5082287200 — h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

a. First Name
b. Last Name
c. Company
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

a. Total Fee Paid
b. State Fee Paid
c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

Dune stabilization. Planting beach grass and bare root shrubs to stabilize the upper dune area

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	C007583/0 and C027004/0
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☒ Coastal Dunes	26,500 1. square feet	0 2. cubic yards dune nourishment

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW
b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings
b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   _____
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☒ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

See Figure 1.
a. Plan Title

b. Prepared By
c. Signed and Stamped by

d. Final Revision Date
e. Scale

f. Additional Plan or Document Title
g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number
3. Check date

4. State Check Number
5. Check date

6. Payor name on check: First Name
7. Payor name on check: Last Name

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A. Applicant Information

1. Location of Project:

a. Street Address | b. City/Town

c. Check number | d. Fee amount

2. Applicant Mailing Address:

a. First Name | b. Last Name

c. Organization

d. Mailing Address

e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

3. Property Owner (if different):

a. First Name | b. Last Name

c. Organization

d. Mailing Address

e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

Total Project Fee:	a. Total Fee from Step 5
State share of filing Fee:	b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Appendix A

Dune Stabilization Project Adjacent to Millie's Bridge

Project Description
January 2020

Jennifer Karberg, PhD
Research Program Supervisor
Nantucket Conservation Foundation
Science and Stewardship Department

Vincent Murphy
Coastal Resilience Coordinator
Town of Nantucket
Department of Natural Resources

1. Introduction

The Millie's Pond area of Hither Creek comprises the properties south west of Millie's Bridge. Historically this area was a large coastal pond with daily tides that was surrounded by a robust salt marsh and dense coastal shrublands. The southwestern edge of this area was bordered by a dune field and beach system fronting the Atlantic Ocean. October 30th 2017, a storm event generating high winds and large surf on the south shore of Nantucket caused the erosion of that dune field, deposition of that sand around the Millie's Pond Area and a direct overwash connection between the Atlantic Ocean and Millie's Pond. Following the storm, overwash ceased but the sand from the eroded dune was displaced on top of the bordering vegetation, salt marsh and filled a significant portion of the coastal pond. Sand of up to 2m was deposited on top of the previous vegetation around the pond. Additional storms and high tides have moved the loose sand in this area, further filling in the pond and covering the salt marsh.

Initially, the new exposed sand covered 2.1 acres of the previous wetland and dune area. In spring of 2019, the sand covered 3.5 acres of area (Figure 1). Native vegetation has been documented as colonizing the exposed sand over the 2018 and 2019 growing season (Karberg 2018 and personal observation). Particularly native dune grasses have been stabilizing the southwestern area of the dune and by July 2019 the sand extent was reduced to 3.1 acres.

Figure 1: Project Locus laid over spring 2017 aerial photo showing current sand extent (pink) and sand extent in November 2018 (Green) with past coverage of dune field, coastal shrubs and salt marsh.

Large unstabilized sand areas have been increasing on Nantucket as dune fields and coastal shrublands are lost to erosion (Bois and Karberg 2019 personal communication). These areas can provide vital habitat

to nesting shorebirds, mating horseshoe crabs, rare native dune plants to name a few but is also extremely susceptible to increased storms and sea level rise. Although stabilizing vegetation is naturally colonizing the exposed sand, the process is slow.

Objectives: This project intends to revegetate a portion of the exposed sand near the top of the forming dune. The Proposed Project Area is ~0.68 acres and located entirely on land owned by the Town of Nantucket (Figure 2). Targeted revegetation efforts will help actively stabilized the building dune and prevent or reduce future washover events that may weaken the Millie's Bridge area. If this project is successful it can provide a model for additional stabilization projects aimed at increasing coastal resilience of natural areas.

This project is anticipated to improve overall coastal dune stability and resilience through little direct impacts to dune sediments and function. This project serves the applicable interests of the Massachusetts *Wetlands Project Act* (M.G.L. c. 131, 40) through its intended outcomes and by meeting the performance standards within the implementing Regulations (310 CMR 10.00) for the wetland resource areas present at the site.

2. Resources Area Information and Waiver Request

The project area is entirely with resource area defined as **coastal dune** coastal wetland resource areas under 310 CMF 10.28 (2) as *any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash.*

Performance Standards

Due to the nature of this project, the stabilization of the coastal dune will meet the performance standards at 310 CMR 10.28 (5)(c) *plantings compatible with the natural vegetative cover.*

The resource areas are defined by the Town of Nantucket Wetland Projection Regulations By-Law Chapter 136 as **Coastal Dunes (Section 2.03)** and **Land Subject to Coastal Storm Flowage (Section 2.10).**

The work proposed in this project will take place entirely within the resource areas. Resource area boundaries have not been delineated in the field and the application does not request verification of the resource boundaries from the Commission.

Waiver Request

This project requests a waiver from Section 2.03 (B)(2) which requires that all non-water dependent projects be at least 25 feet from the resource area. This project will take place entirely with the resource area. This project will provide a "long tern net benefit/improvement to the resource area" through revegetation using native vegetation intended to enhance the ability of the coastal dune to "aid in storm damage prevention, erosion and flood control; protect land in coastal areas from storm damage, serve to provide wildlife habitat and provide important wetland scenic views."

Therefore, this project requests a waiver be issued under Section 1.03(F) (a) and (c).

3. Site ownership

The Proposed Project Area is located entirely on land owned by the Town of Nantucket (Figure 2). Adjacent property owners within the Millie's Pond area include Massachusetts Audubon and a private homeowner, 8 Ames Ave. Future work may be designed on these adjacent properties if this project proves successful.

Figure 2: Proposed Project Area and Site Ownership.

4. Site assessment

The Proposed Project Area is composed of mostly bare, unconsolidated sand and forming sand dunes. Vegetation is beginning to colonize the exposed sand, both from adjacent established sand dunes and also from deposition of seeds and plant material during high tide events. The Nantucket Conservation Foundation has conducted vegetation community surveys in 2018 and 2019. Dominant plants current colonizing on the exposed sand include American beachgrass (*Ammophila brevigulata*), groundsel (*Baccharis halimifolia*), high tide bush (*Iva frutescens*), and seaside sandmat (*Euphorbia polygonifolia*). Two non-native and invasive plants were observed, beach wormwood (*Artemisia stelleriana*) and saltwort (*Salsola kali*), groundsel (*Baccharis halimifolia*), high tide bush (*Iva frutescens*), and seaside sandmat (*Euphorbia polygonifolia*). Two non-native and invasive plants were observed, beach wormwood (*Artemisia stelleriana*) and saltwort (*Salsola kali*). In 2019, a small stand of common reed (*Phragmites australis*) was observed growing up through the sand from a prior population. A small population of seabeach knotweed (*Polygonum glaucum*) was documented in both 2018 and 2019. This is an ephemeral exposed sand plant species of "Special Concern" in Massachusetts. Leaving exposed sand within the

Project Area and closer to the current pond will provide an area for this species to persist. Any planting for this project should avoid impacts to this species.

No vegetation assessment was conducted before to the storm event that deposited most of the sand in October 2017. The Nantucket Vegetation Community maps created by The Nature Conservancy indicate that the proposed project area was dominated by Salt Marsh and Maritime Dune vegetation communities (Figure 3). The increased elevation of the sand and lack of daily tidal inundation make the restoration of salt marsh vegetation with the project area difficult.

Maritime Dune Vegetation Communities are defined as: "usually dominated by *Ammophila brevigulata* (dense to open cover). Beyond tidal influence. May also include scattered forbs, shrubs (*Hudsonia* spp., *Morella carolinana*, *Rosa* spp.) and lichen." (MA Natural Heritage & Endangered Species Program, Classification of Natural Communities of Massachusetts).

Google Street View offers one of the few documented pictures of the area prior to this storm event. This photograph is shown below in **Figure 3**. There are some issues with this image. It was captured in September 2008, some 9 years before the storm event that altered the area and covered it in sand. The resolution is also quite low, and it is impossible to identify any particular species. What it does show is (1) that the Millie's pond area was much bigger, (2) that the whole area was vegetated above the water line, and (3) that the vegetation height was low (grass to scrub height) all the way to the top of the dune at the time.

Figure 3. Google Street View of the proposed project area from September 2008, prior to the storm events showing previous salt marsh and coastal dune vegetation.

Additionally, prior to the winter of 2018-2019, snow fence was established at the top of the dune without prior permission from the Town of Nantucket or the Nantucket Conservation Foundation. This fencing has captured and stabilized sand in the area **Figure 4.**

Elevational monitoring indicates that the height of the captured sand has increased and built up the dune in this area and should remain in place as a tool during the restoration project. Additionally, vegetation that established after the storm are holding on to more sand, helping build up and stabilize the forming dunes.

Figure 4: (A) Snow fencing at the top of the Proposed project area that has been accumulating and holding sand. (B) Vegetation holding sand in project area.

5. **Site closure**

Ahead of any proposed planting on this site, the site should be closed to all pedestrian traffic. Roadside and beachside symbolic fencing and signage should be put in place to minimize disturbance. This closure may not be applied to the property owned by 8 Ames Avenue without their express permission.

6. **Dune Planting Design and Justification**

The vegetation community prior to the sand overwash was categorized was Coastal Dune Community (as described above). Additionally, viewing photos, current surrounding vegetation and personal observations indicated that significant woody shrub vegetation was present on the site matching the definition of Maritime Shrubland on Dunes: "mixed shrubs on dunes, including *Morella caroliniana*, *Gaylussacia baccata*, *Rosa* spp., and *Baccharis halimifolia*." (MA Natural Heritage & Endangered Species Program, Classification of Natural Communities of Massachusetts).

Combining these two vegetation communities, we propose to plant a mix of dune vegetation using American beach grass intermixed with stabilizing woody vegetation including Bayberry (*Morella*

caroliniana) and High Tide Bush (*Baccharis halimifolia*). Depending on availability, we would also like the flexibility to plant additional native forbs such as Seaside goldenrod,

The Maritime Dune Community should be planted as soon as possible to stabilize the upper area of the proposed works area. Planting this mixed maritime dune community in the proposed project area adjacent to the current sand fencing will help stabilize this area, holding the sand in place and allowing additional accretion. It will also prevent windblown sand from causing additional sedimentation into Millie's Pond and Hither Creek areas. Within the proposed works area, the southern third of the site that needs to be stabilized as a matter of urgency is shown in **Figure 2**. The proposed project area extends from the current snow fencing north for about 120 feet and covers an area of approximately 0.68 acres (**Figure 2**).

The Maritime Dune Community will be planted with a mix of species found in the neighboring plant communities. Additionally, other suitable plant species will be selected to plant in the proposed works area. A mixed planting regime is suggested and will be composed of 50% Beach Grass by area and 50% scrub species by area, and detailed with costs below in **Table 1** and planting regime in **Figure 5.**

7. When and how to plant

Planting is anticipated to take place in two phases with an early fall planting (particularly of beach grass to stabilize the dune and hold winter sand) as well as in the spring.

Beach grass grows best in cool weather and therefore typically gets its best start when planted from mid-November through mid-April (but not when the ground is frozen). In areas exposed to strong wind or waves, it is best to plant beach grass in the early spring to reduce the likelihood that it will be washed or blown away in winter storms. Beach grass culms (the single plant with stem) should be spaced approximately 18 inches apart to ensure successful establishment. In areas that are particularly vulnerable to storms, waves, and washouts, plant culms closer together (e.g., 12 inches apart) to maximize sand build-up and enhance erosion control. Because the plants spread approximately 6 to 10 feet horizontally each year, there is no need to over plant.

Planting of the bare root shrubs and forbs is best undertaken in the early spring. This can be done before Seabeach Knotweed has established. Plants should be spaced 8-10 feet apart.

Fertilizers are not recommended or requested for this project. A modest use of fertilizer can encourage plant growth and speed stem and root growth. However, fertilizers can also be washed into coastal waters where they can cause excessive algae growth, reducing oxygen supplies and leading to fish kills. **This is not recommended or requested for this project given the gradient and proximity of Hither Creek.**

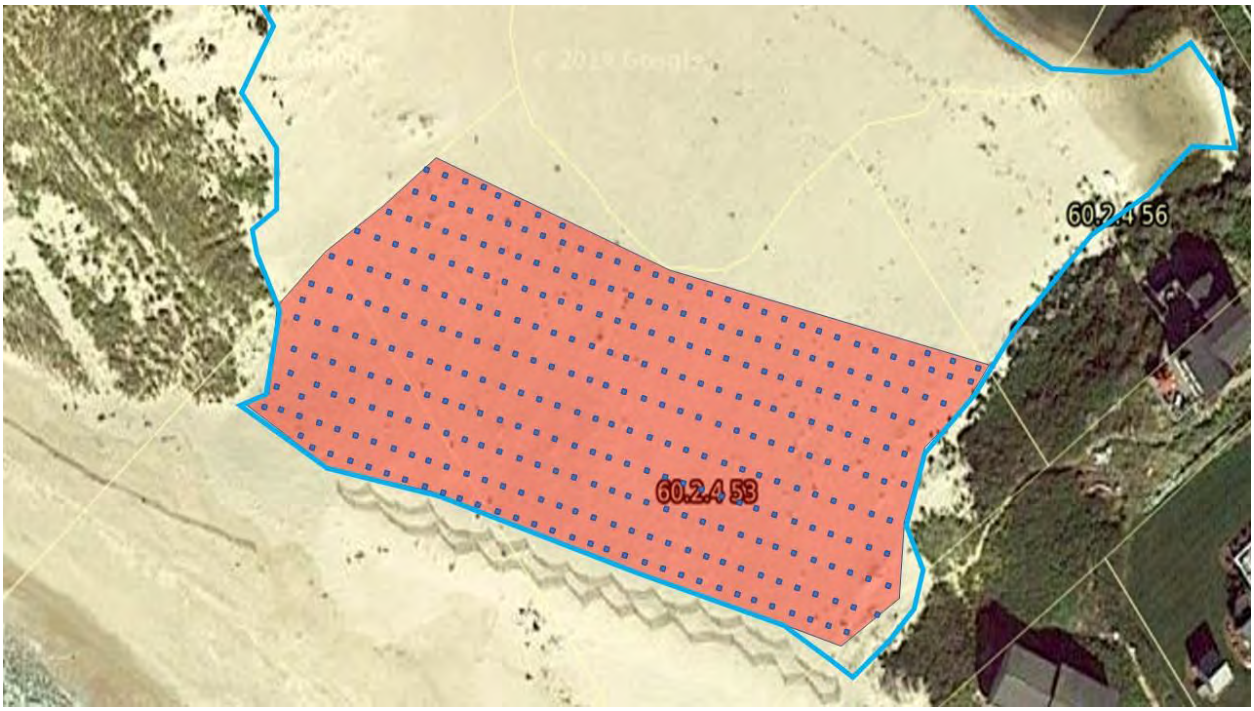


Figure 5. Structured planting plan of 400 bare root plants in 0.68 acres. We anticipate that actual planting will be less uniform and more natural.

8. Project Scheduling

September/ November 2019 – secure funding

January 2020 – CONCOM application

March 2020 – Contact suppliers to order stock for spring planting

April to May 2020 – depending on if it is an early or late spring, plant the stock

April 2020 to October 2021 – 18-month post planting study growth, survival and sand accumulation

April 2020 – Photomonitoring, vegetation plots, elevation monitoring

June 2020, August 2020, October 2020 – Repeat monitoring

9. Monitoring

The Project Area will be monitored to document planting survivorship as well as recruitment of additional species diversity in order to quantify success of the project. Elevation of the dune will help quantify the success of vegetation plantings to retain and build dune structure.

The Nantucket Conservation Foundation has monitored the washover area since 2017 documenting sand extent, elevation and vegetation communities (reports available from NCF upon request). Monitoring for this project will incorporate the elevation sampling locations and vegetation sampling plots established by NCF. Additional vegetation sampling plots will be established to exam species and survivorship within the Project Area. Plots will be surveyed in the spring post planting, in June, August and October.

Additionally, we plan to establish permanent photo monitoring points around the Project Area that will be sampled at least 4 times a year.

Appendix B.

Email conversation with Mark Barlow on requirement of an Ecological Restoration Limited Project.

From: Bartow, Mark (DEP) <mark.bartow@state.ma.us>

Sent: Tuesday, December 17, 2019 11:38 AM

To: Vincent Murphy

Subject:RE: Vince Murphy - question about additional application requirement

If everyone is OK with calling it dune, then I think you're good to go. Just attached a map of the area to the NOI and call out the dune. I certainly don't want to make it any more complicated. Tell Jeff I said hi.

From: Vincent Murphy <vmurphy@nantucket-ma.gov>

Sent: Tuesday, December 17, 2019 11:32 AM

To: Bartow, Mark (DEP) <mark.bartow@mass.gov>

Subject: RE: Vince Murphy - question about additional application requirement

Hi Mark, Yes. Just asked Jeff and he says that the area is mostly or entirely coastal dune. He also added that there are elements of coastal beach closer to Hither creek. I'm staying out of that area. Want maps? Vince.

From: Bartow, Mark (DEP) <mark.bartow@state.ma.us>

Sent: Tuesday, December 17, 2019 11:24 AM

To: Vincent Murphy <vmurphy@nantucket-ma.gov>

Subject: RE: Vince Murphy - question about additional application requirement

Hi Vince,

My first thought is that the area you describe might be considered a Coastal Dune as defined at 310 CMR 10.28. We'd need to confirmed that, but if it is then the performance standards allow for planting (10.28(5)), and you wouldn't need to jump through the Ecological Restoration Limited project hoops.

So, do you think the area would qualify as a coastal dune?

Mark

From: Vincent Murphy <vmurphy@nantucket-ma.gov>

Sent: Tuesday, December 17, 2019 10:36 AM

To: Bartow, Mark (DEP) <mark.bartow@mass.gov>

Subject: Vince Murphy - question about additional application requirement

Hi Mark,

I have a question about a project I am working on. I am looking at planning beach grass and native shrubs in an area that washed over and was covered by several feet of sand a few years ago. The area is relatively stable, but I want to plant it up as a barrier to more washover events , and potential causing a breach into a neighboring tidal system. I'm working on the NOI. Is it appropriate to send you the information to see if it requires additional paperwork around Limited Ecological Restoration, or any other reviews are required?

Please feel free to call or I can just send you the information.

Vince.

Vincent Murphy

Coastal Resilience Coordinator

Natural Resources Department

Town of Nantucket

2 Bathing Beach Road

Nantucket, MA 02554

508-228-7230 Ext 7608

520-955-2179

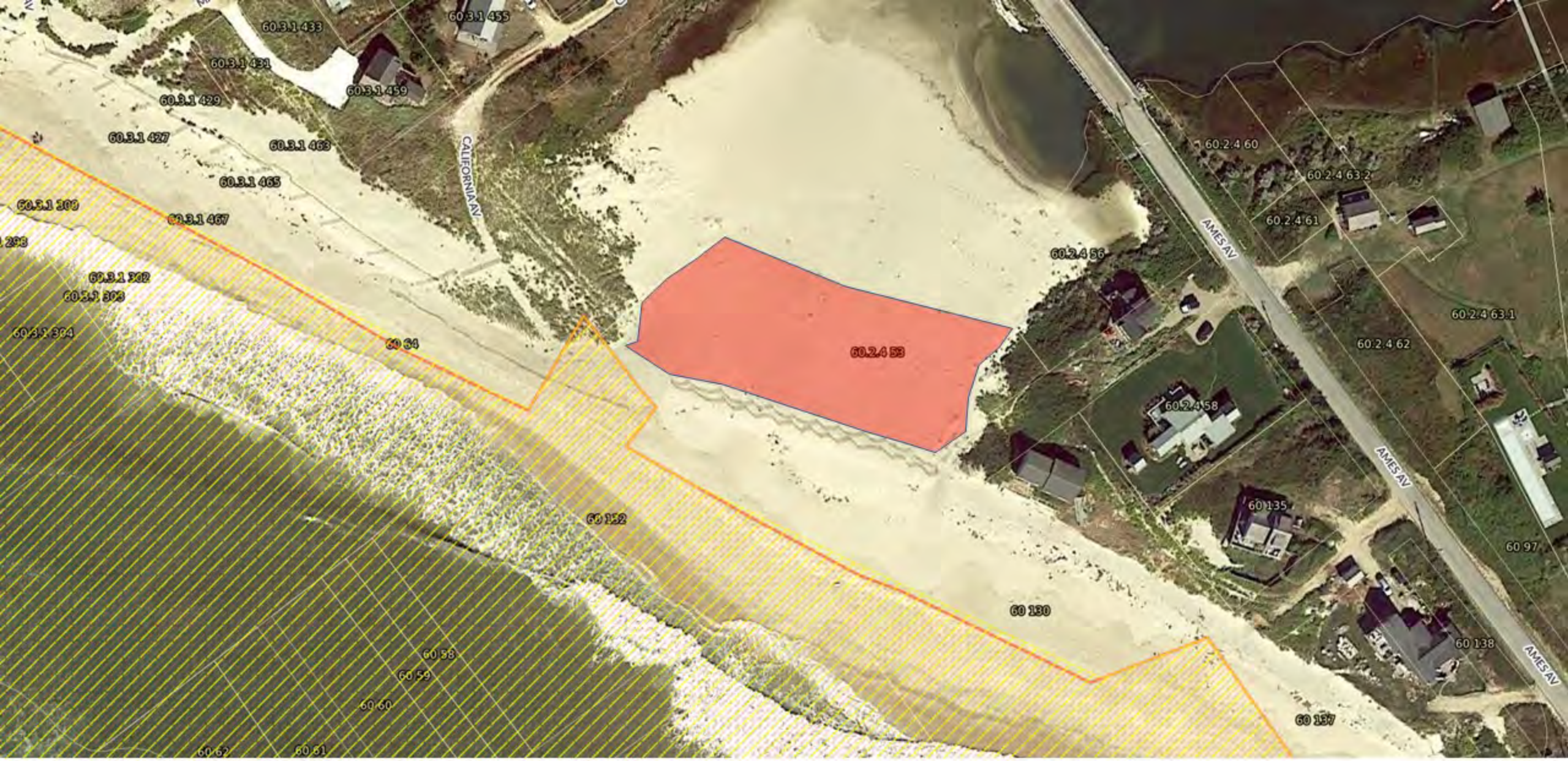


Figure 1. Development area (red) in relation to Natural Resources Protection (hatched) areas (1) NHESP Priority habitat for rare species and (2) NHESP Estimated habitats of rare wildlife.

Notice of Intent Application

17, 19 & 21 Folger Avenue
Map 80, Parcels 151, 110 and 42, respectively
Nantucket, MA

January 29, 2020

Main Office:
49 Herring Pond Rd.
Buzzards Bay, MA 02532
Ph. 508-833-0070
Fax 508-833-2282

Nantucket Office:
19 Old South Rd.
Nantucket, MA 02554
www.brackeneng.com
Ph. 508-325-0044

List of Materials and Plans - Notice of Intent

1. Project Narrative
2. Notice of Intent – Form 3
3. Maps
   - USGS Topographic Map
   - Aerial Orthophoto
   - Nantucket Parcel Map
   - FEMA Flood Insurance Map #25019C00151G, effective date June 9, 2014
   - Natural Heritage & Endangered Species Map (14th edition 8/1/17)
4. Abutter Documents
   - Affidavit of Service
   - Certified Abutters List
   - Notification to Abutters
   - Proof of Abutter Mailing (Certified Receipts)
5. Plan: *Sewer Extension Design Plan in Nantucket, MA*, dated January 29, 2020 prepared by Bracken Engineering, Inc.

PROJECT NARRATIVE

Prepared for

Lewis E. Kelsey, Jr.

17, 19 & 21 Folger Avenue, Nantucket Map 80, Parcels 151, 110 & 42 respectively

On behalf of the Applicant, Lewis E. Kelsey, Jr., Bracken Engineering, Inc. respectfully submits this Notice of Intent (NOI) for the proposed installation of a low-pressure sewer system with the Folger Avenue Right-of-Way (ROW). The proposed work would occur within the 100-foot buffer zone to a Bordering Vegetated Wetland (BVW).

Wetland Resource Areas

The wetland resource area is a BVW which is located at the Southerly end of Folger Avenue and on the Easterly side of the ROW. The limits of the BVW were delineated by LEC Environmental Consultants and field located by Bracken Engineering, Inc. No work is proposed within wetland resource area.

Proposed Project

The proposed project involves the installation of a 2" SDR11 HDPE sewer force main and associated manholes within the limits of the existing traveled way. The force main will be installed approximately 4 feet deep within a narrow trench, that will be excavated and backfilled immediately after installation. The proposed installation will occur entirely within the existing travelled way and therefore will avoid alteration to vegetated/natural areas.

The proposed work areas will be defined by silt fence to contain all work activities and prevent sedimentation/erosion to the downgradient BVW.

Performance Standards

Protection of Public and Private Water Supply and Ground Water Supply

The site is not located within a DEP defined wellhead protection area and appropriate measures are proposed to protect the existing wells in the vicinity of the project. Therefore, the public and private water supply and groundwater supply protection interests of the Act and the Bylaw will be upheld.

Flood Control and Storm Damage Prevention

No work is proposed within a special flood hazard area. Therefore, the flood control and storm damage prevention interests of the Act and Bylaw will be upheld.

Prevention of Pollution

Erosion control measures consisting of staked silt fence will be implemented as depicted on the enclosed plans. Therefore, the pollution interests of the Act and Bylaw will be upheld.

Protection of Fisheries, Shellfisheries, and Wildlife Habitat

The proposed project is not within mapped NHESP designated areas (Estimated or Priority Habitats), and the site does not contain any vernal pools, or fisheries or shellfisheries resources.

Therefore, the fisheries, shellfisheries and wildlife habitat interests of the Act and Bylaw will be protected.

Waiver Request

As stated in the Nantucket Wetland Protection Regulations, Part III, Section 3.02, *Vegetated Wetlands or Land within 100 feet of Vegetated Wetlands shall be presumed significant to the Interests Protected by the Bylaw*.

Furthermore, Part III, Section 3.02 B.1 states, *proposed projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to vegetated wetlands… Fifty percent (50%) of the area between the 25-foot buffer and the 50-foot buffer shall not be altered.*

Under existing conditions, portions of the existing Folger Avenue traveled way occur within 25 feet of the BVW. Portions of the 25-foot buffer area extend almost entirely across the ROW and therefore, proposed work within the 25-foot buffer is unavoidable.

Consequently, the applicant is respectfully requesting a waiver from Part III, Section 3.02 B.1 for the work within the 25-foot buffer zone. The grounds for granting the requested waiver are as follows:

- All work within the 25-foot buffer will occur within an existing traveled way and as a result, no new disturbances will be created.
- Silt fence will be installed to demarcate a limit of work and to prevent sedimentation of the resource area, so there will be no adverse impacts to the BVW.
- The 25-foot buffer zone extends almost entirely across the ROW, so work within the 25-foot buffer is unavoidable.
- The homes on Folger Avenue, which are currently serviced by on-site septic systems, will be able to connect to the new sewer force main, providing a net benefit over existing conditions.

Summary

The Applicant proposes the installation of a low-pressure sewer system with the Folger Avenue Right-of-Way (ROW), which falls within the 100’ buffer to the BVW. Appropriate measures are proposed to be employed to minimize adverse effects and prevent erosion and migration of sediment that may otherwise impact resource areas. As proposed, the Project has met the burden of proof established under the Act and Bylaw.

Therefore, the Applicant respectfully requests a waiver for the portion of work that falls within the 25-foot buffer and the issuance of an Order of Conditions by the Conservation Commission.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 &
The Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

17, 19 and 21 Folger Avenue	Nantucket	02554
a. Street Address	b. City/Town	c. Zip Code

Latitude and Longitude:

41.248590	-70.101250
d. Latitude	e. Longitude

Map 80	Parcels 151, 110 and 42, respectively
f. Assessors Map	g. Parcel /Lot Number

2. Applicant:

Lewis E.	Kelsey, Jr.
a. First Name	b. Last Name

c. Organization

P.O. Box 3277
d. Street Address

Nantucket	MA	02584
e. City/Town	f. State	g. Zip Code

508-325-2423		lewisekelsey@gmail.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property owner (required if different from applicant): ☒ Check if more than one owner (See attached list)

Michelle S.	Kelsey, Trustee
a. First Name	b. Last Name

17 Folger Avenue Realty Trust
c. Organization

P.O. Box 3277
d. Street Address

Nantucket	MA	02584
e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

Donald F.	Bracken, Jr., PE
a. First Name	b. Last Name

Bracken Engineering, Inc.
c. Company

19 Old South Road
d. Street Address

Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code

508-325-0044	508-833-2282	don@brackeneng.com
h. Phone Number	i. Fax Number	j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$500.00	$237.50	$262.50
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The proposed project consists of installing a sewer force main and associated grading with the Folger Avenue Right-of-Way (ROW). The proposed work would occur within the 100-foot buffer zone to a Bordering Vegetated Wetland (BVW).

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for: **(See Attached Owner List for Additional Properties)**

Nantucket	
a. County	b. Certificate # (if registered land)
1566	317
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☒ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   August 1, 2017
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Boulevard
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☒ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Sewer Extension Design Plan
a. Plan Title

Bracken Engineering, Inc.
b. Prepared By

Donald F. Bracken, Jr., PE & Alan M. Grady, PLS
c. Signed and Stamped by

January 29, 2020
d. Final Revision Date

1" = 40'
e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

14889
2. Municipal Check Number

1/29/2020
3. Check date

14890
4. State Check Number

1/29/2020
5. Check date

Bracken Engineering, Inc.
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 &
The Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant — 2. Date: 1/13/20

Michele Filby owner/trustee

3. Signature of Property Owner (if different) — 4. Date: 1.13.20

5. Signature of Representative (if any) – BRACKEN ENGINEERING, INC. — 6. Date: 1-29-20

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

19 Folger Avenue - Karlton A. Phillips & Suzanne L. Riddle
Map 80, Parcel 110

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 &
The Town of Nantucket Wetlands Bylaw Chapter 136

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant — 2. Date: 1-16-20
3. Signature of Property Owner (if different) — 4. Date: 1-16-20
5. Signature of Representative (if any) - BRACKEN ENGINEERING, INC. — 6. Date: 1-29-20

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

21 Folger Avenue - Carlin Contracting Co., Inc.
Map 80, Parcel 42

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 &
The Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Carlin Contracting Co., Inc. Pres. 1/17/20

1. Signature of Applicant — 2. Date

3. Signature of Property Owner (if different) — 4. Date

1-29-20

5. Signature of Representative (if any) BRACKEN ENGINEERING, INC. — 6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

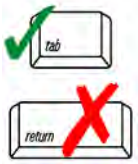
Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

17, 19 & 21 Folger Avenue	Nantucket
a. Street Address	b. City/Town
14890	$237.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Lewis E.	Kelsey, Jr.
a. First Name	b. Last Name

c. Organization

P.O. Box 3277
d. Mailing Address

Nantucket	MA	02584
e. City/Town	f. State	g. Zip Code

508-325-2423		lewisekelsey@gmail.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different): (See attached list for Additional Owners)

Michele S	Kelsey, Trustee
a. First Name	b. Last Name

17 Folger Avenue Realty Trust
c. Organization

P.O. Box 3277
d. Mailing Address

Nantucket	MA	02584
e. City/Town	f. State	g. Zip Code

		lewisekelsey@gmail.com
h. Phone Number	i. Fax Number	j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2j (other)	1	$500.00	$500.00

Step 5/Total Project Fee: $500.00

Step 6/Fee Payments:

Total Project Fee:	$500.00 a. Total Fee from Step 5
State share of filing Fee:	$237.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$262.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Notice of Intent Application
January 29, 2020

List of Additional
Property Owners

1) 19 Folger Avenue (Map 80, Parcel 110)

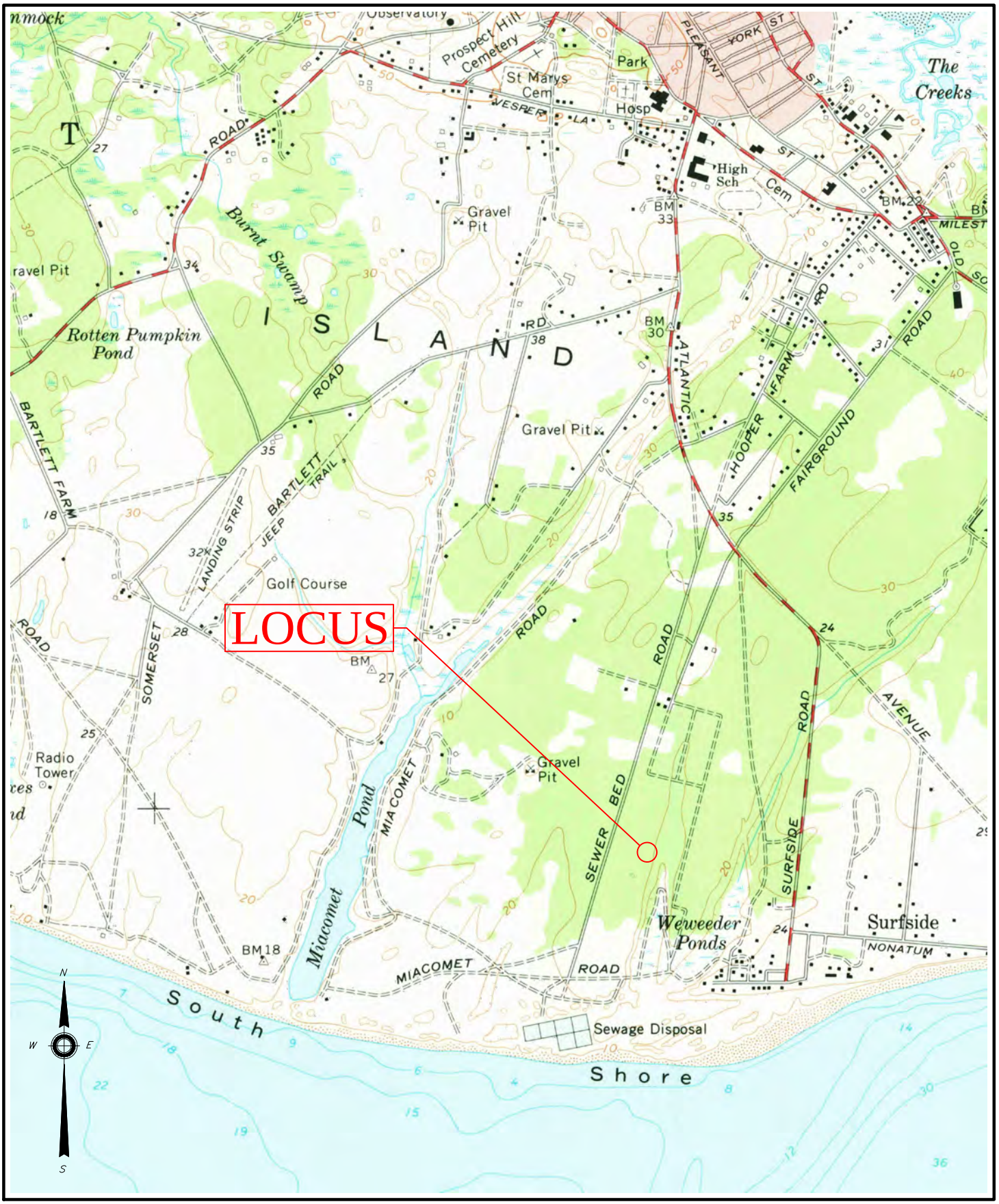
KARLTON A PHILLIPS &
SUZANNE L RIDDLE
19 FOLGER AVENUE
NANTUCKET, MA 02554

Legal Reference: Book 753, Page 188

2) 21 Folger Avenue (Map 80, Parcel 42)

CARLIN CONTRACTING CO INC
C/O BRIAN CAREY
PO BOX 300
WATERFORD, CT 06385

Legal Reference: Book 1058, Page 336



BRACKEN ENGINEERING, INC.

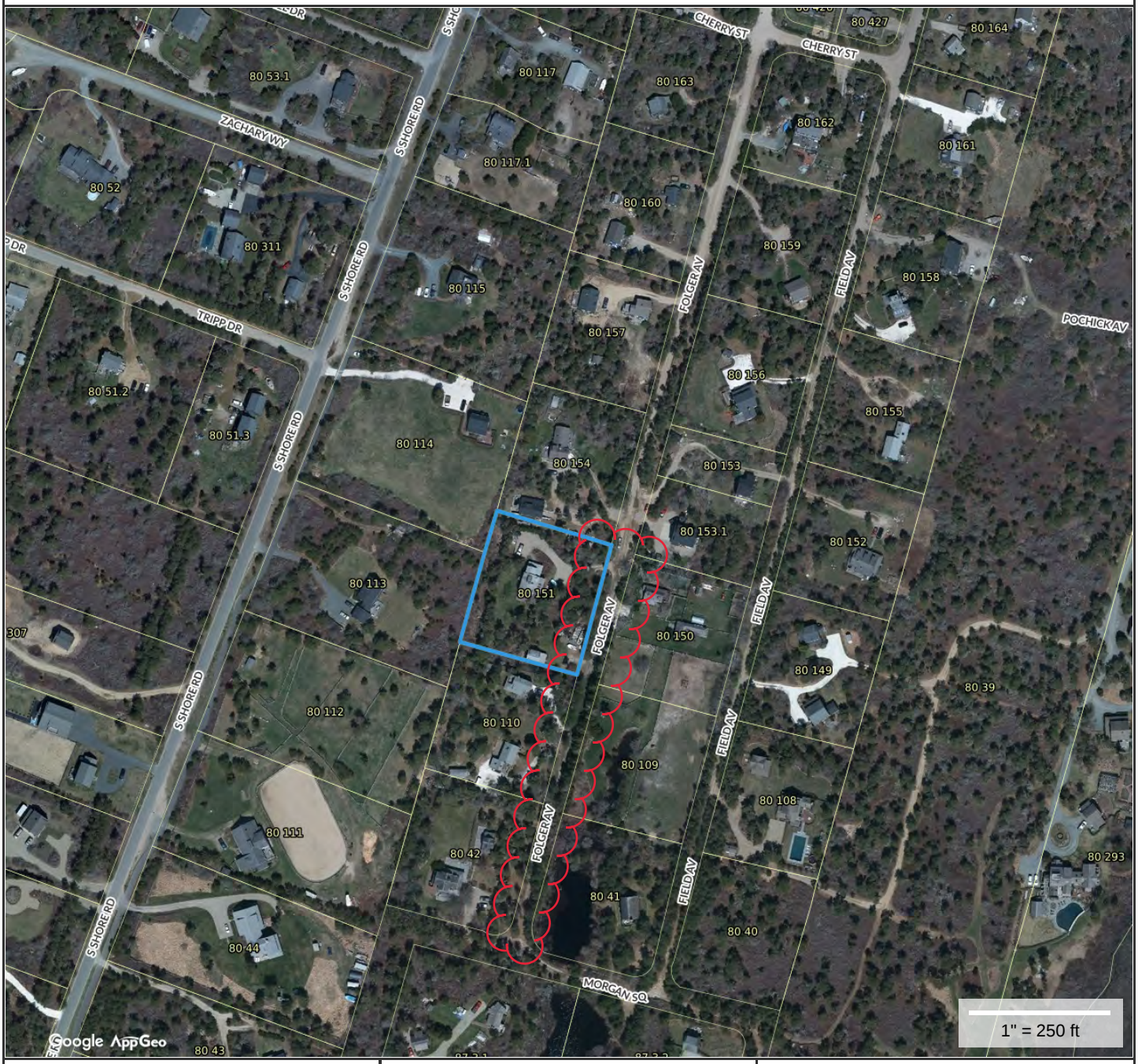
19 OLD SOUTH ROAD
NANTUCKET, MA 02554

(tel) 508.325.0044
(fax) 508.833.2282
www.brackeneng.com

USGS MAP

#17 FOLGER AVENUE
NANTUCKET, MA

17, 19 & 21 Folger Avenue - GIS Aerial Orthophoto



Property Information

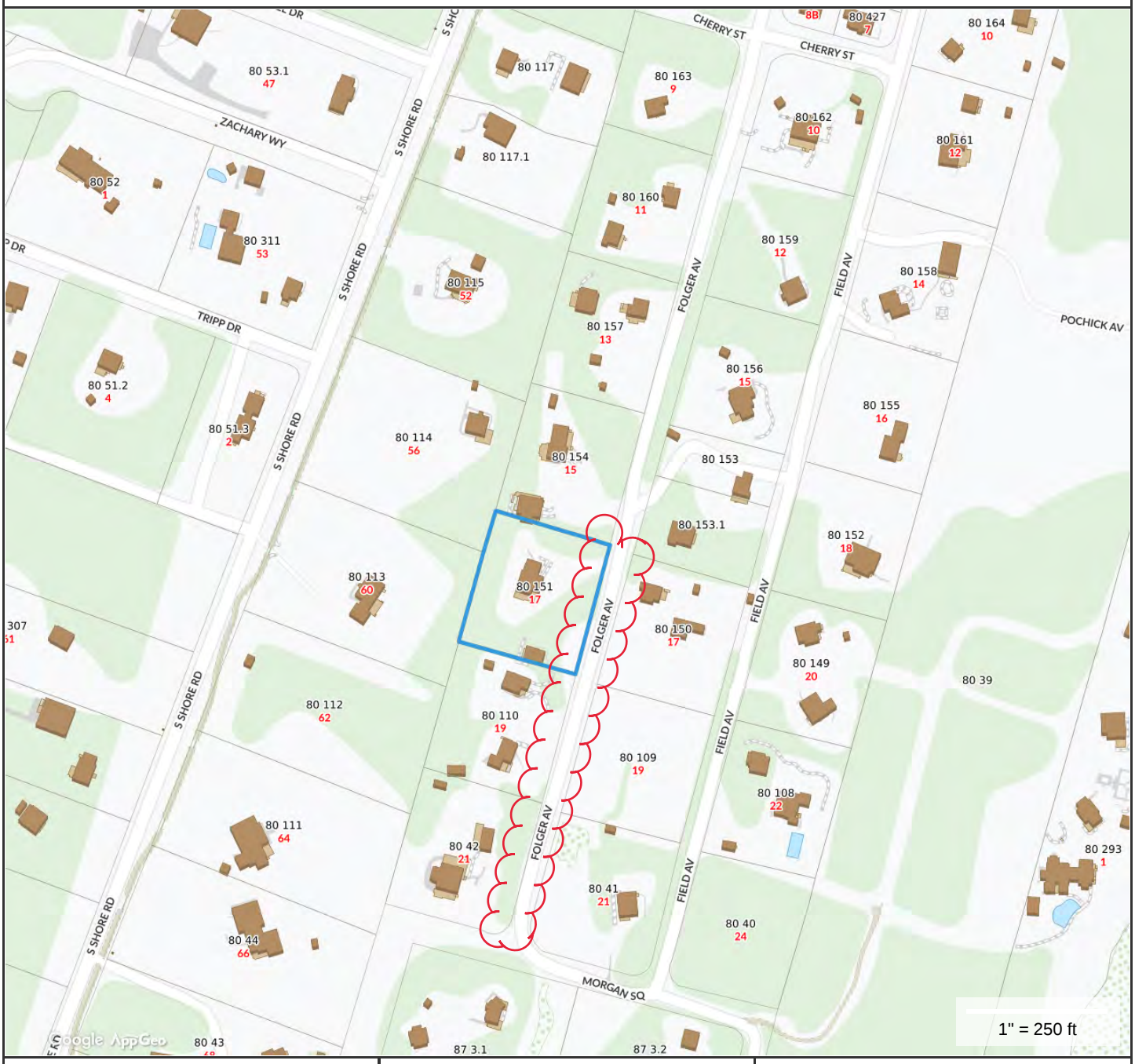
Property ID	80 151
Location	17 FOLGER AV
Owner	KELSEY MICHELE S TR

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018

17, 19 & 21 Folger Avenue - GIS Parcel Map



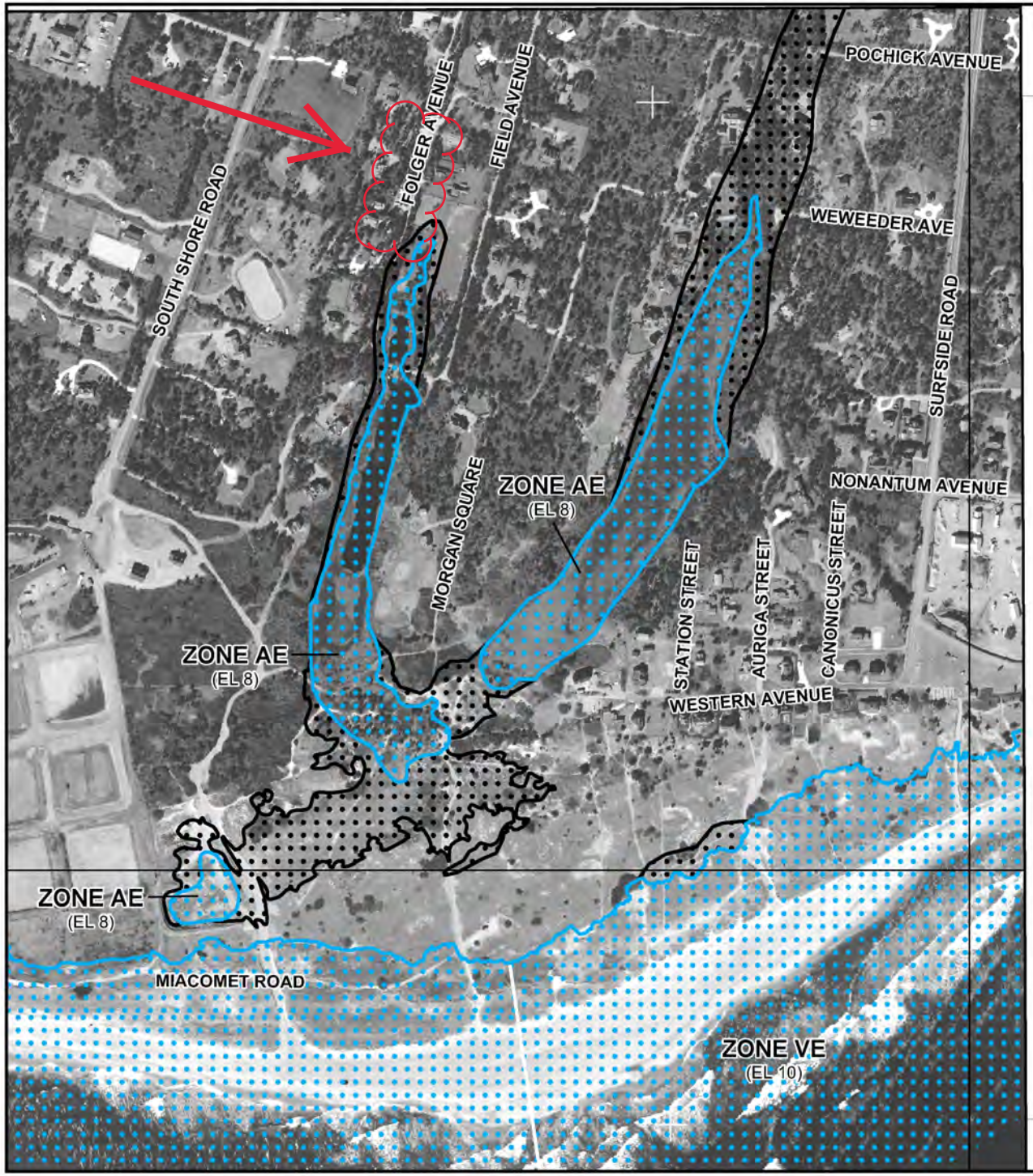
Property Information

Property ID	80 151
Location	17 FOLGER AV
Owner	KELSEY MICHELE S TR

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018



MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0151G

FIRM

FLOOD INSURANCE RATE MAP

NANTUCKET COUNTY, MASSACHUSETTS
(ALL JURISDICTIONS)

PANEL 151 OF 177

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NANTUCKET, TOWN OF	250230	0151	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
25019C0151G

EFFECTIVE DATE
JUNE 9, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

17, 19 & 21 Folger Avenue - GIS NHESP Map

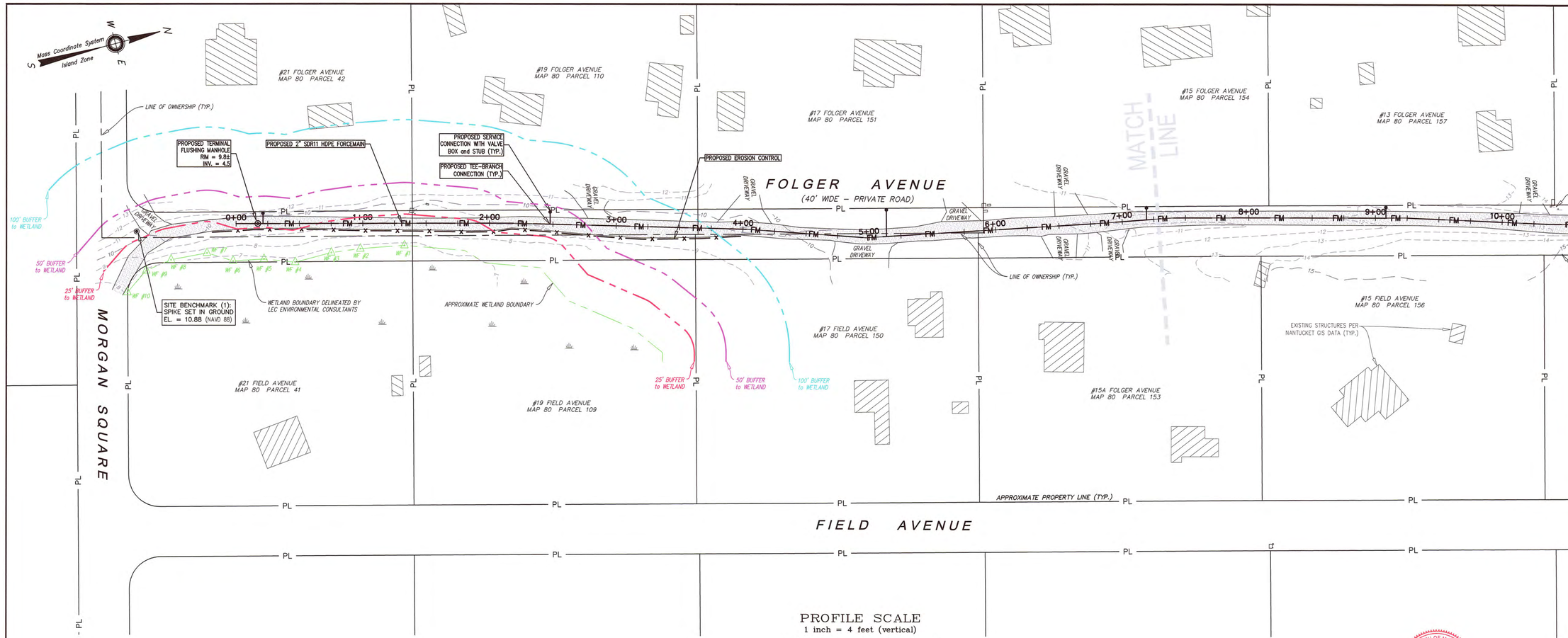
Property Information

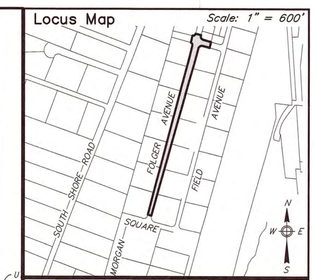
Property ID	80 151
Location	17 FOLGER AV
Owner	KELSEY MICHELE S TR

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018



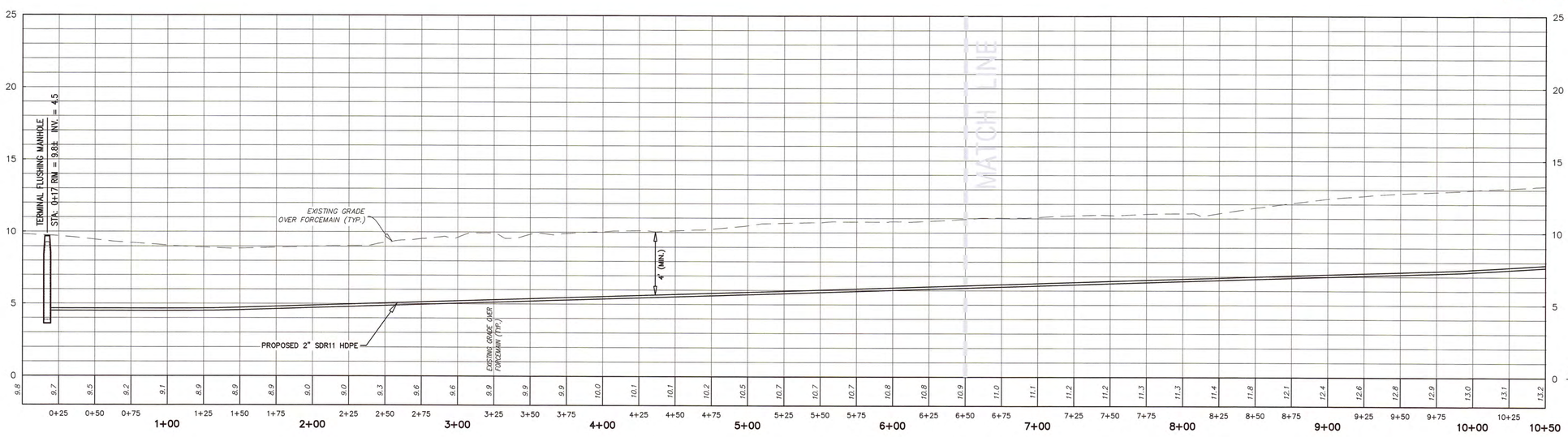


General Notes

1. ALL CONSTRUCTION TO COMPLY WITH CHAPTER 200, BOARD OF PUBLIC WORKS/SEWER COMMISSIONERS, ARTICLE I.
2. CONTRACTOR TO DETERMINE OR VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION (TELEPHONE, ELECTRIC, GAS, CABLE TV, WATER, ETC.).
3. 4" THICKNESS TOPSOIL AND SEED LANDSCAPED AREAS DISTURBED BY CONSTRUCTION. RESTORE EXISTING ROADS TO EXISTING CONDITIONS.
4. FORCE MAIN PIPING TO BE $1\frac{1}{2}$" & 2" SDR11 HDPE PRESSURE PIPE. CONCRETE THRUST BLOCKS TO BE PLACED AT ALL BENDS AND FITTINGS. MAINTAIN 4.0' OF COVER OVER FORCE MAIN.
5. PRIOR TO PLACEMENT IN SERVICE, THE FORCE MAIN SHALL BE FLUSHED CLEAN OF ANY CONSTRUCTION DEBRIS. THE FORCE MAIN MUST BE PRESSURE TESTED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF AWWA STANDARDS AND STANDARDS SET BY CHAPTER 200, SECTION 11.08. THE TEST SHALL BE OBSERVED BY THE OWNERS REPRESENTATIVE.
6. ADDITIONAL UNDERGROUND UTILITIES NOT SHOWN ON THIS PLAN MAY EXIST AND THIS FIRM GIVES NO WARRANTY TO THEIR LOCATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY DIG–SAFE PRIOR TO THE COMMENCEMENT OF ANY WORK ON THE SITE.
7. ALL WORK TO BE INSPECTED PRIOR TO BACKFILL IN ACCORDANCE WITH REGULATIONS REFERENCED IN NOTE #1.
8. EXISTING BUILDINGS AND DRIVEWAYS SHOWN ARE APPROXIMATE AND TAKEN FROM NANTUCKET'S GIS.
9. APPLICANT AND CONTRACTOR SHALL COORDINATE WITH INDIVIDUAL PROPERTY OWNERS FOR FINAL LOCATION OF SERVICE CONNECTIONS PRIOR TO BEGINNING WORK.

PROFILE SCALE
1 inch = 4 feet (vertical)
0 1 2 3 4 8 12
0 10 20 30 40 60 80 120
1 inch = 40 feet (horizontal)
PLAN SCALE

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN, JR.
CIVIL
No. 37071
REGISTERED PROFESSIONAL ENGINEER
1-29-20



LEGEND

—FM—	PROPOSED SEWER FORCEMAIN
⊙	PROPOSED SEWER MANHOLE
	WETLAND LINE
	100' WETLAND BUFFER
	50' WETLAND BUFFER
	25' WETLAND BUFFER
—PL—	PROPERTY LINE

Prepared By:
BRACKEN ENGINEERING, INC.
49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282
19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

SEWER EXTENSION DESIGN IN NANTUCKET, MASSACHUSETTS

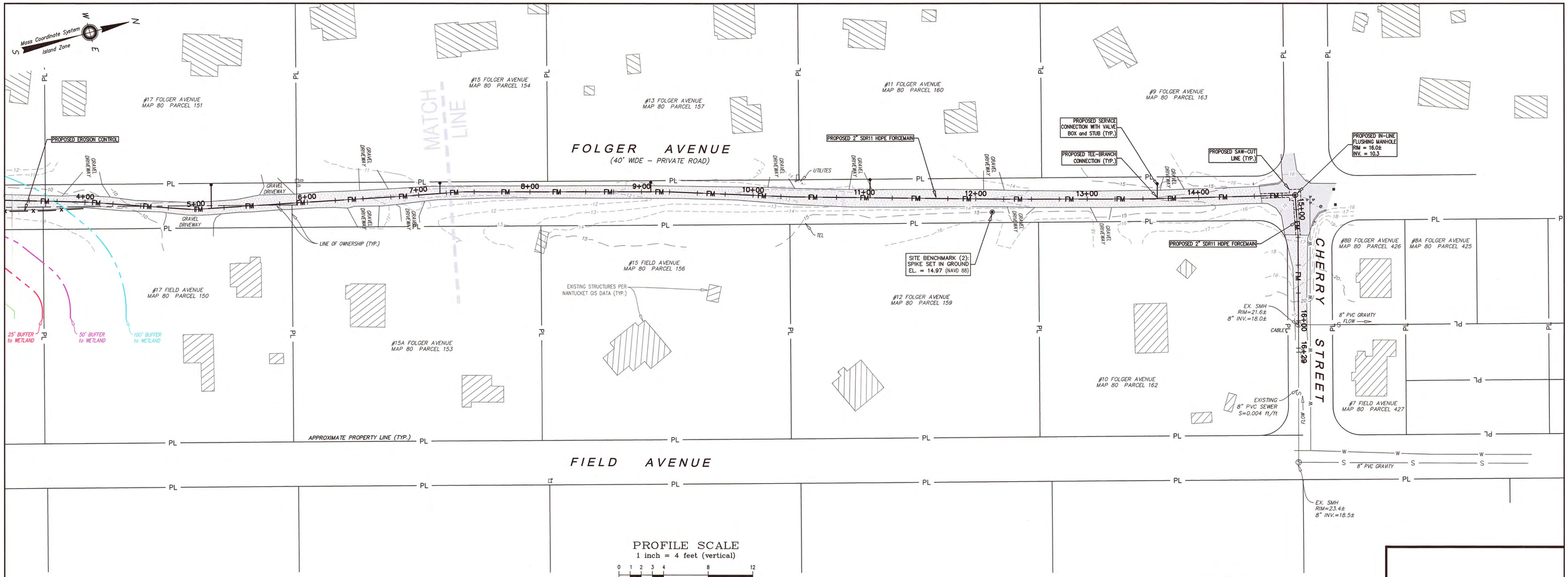
Prepared For:

17 FOLGER AVENUE REALTY TRUST

#17, 19 & 21 FOLGER AVENUE
MAP 80 PARCEL 151

No.	Date	Revision Description	By

Date:	Drawn:	Checked:	Sheet:
JANUARY 29, 2020	RMM/BEI	DFB/AMG	1 of 3



PROFILE SCALE
1 inch = 4 feet (vertical)

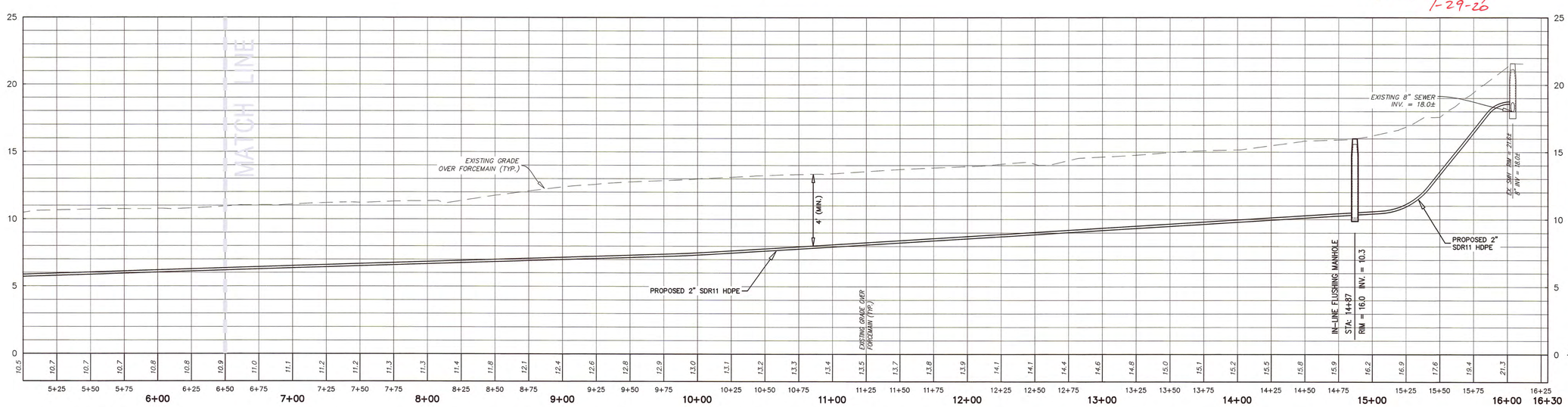
0 1 2 3 4 8 12

0 10 20 30 40 60 80 120

1 inch = 40 feet (horizontal)
PLAN SCALE

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN, JR.
CIVIL
No. 37071
REGISTERED PROFESSIONAL ENGINEER

1-29-20



NAVD88 DA

LEGEND

—FM—	PROPOSED SEWER FORCEMAIN
⊙	PROPOSED SEWER MANHOLE
	WETLAND LINE
	100' WETLAND BUFFER
	50' WETLAND BUFFER
	25' WETLAND BUFFER
—PL—	PROPERTY LINE

Prepared By:
BRACKEN ENGINEERING, INC.
49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282
19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

SEWER EXTENSION DESIGN IN NANTUCKET, MASSACHUSETTS

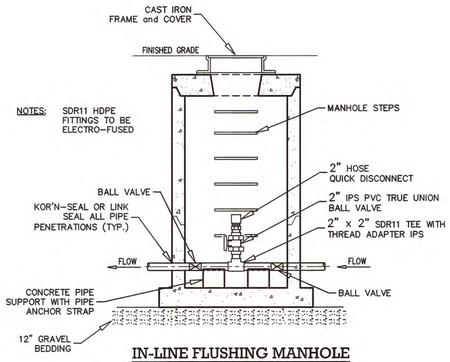
Prepared For:

17 FOLGER AVENUE REALTY TRUST

#17, 19 & 21 FOLGER AVENUE
MAP 80 PARCEL 151

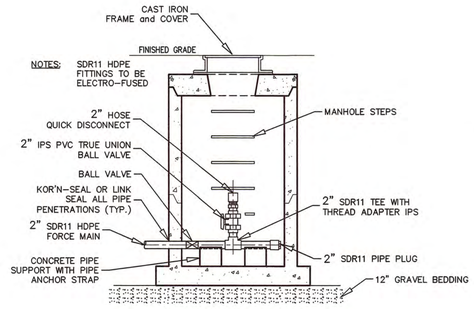
No.	Date	Revision Description	By

Date:	Drawn:	Checked:	Sheet:
JANUARY 29, 2020	RMM/BEI	DFB/AMG	2 of 3



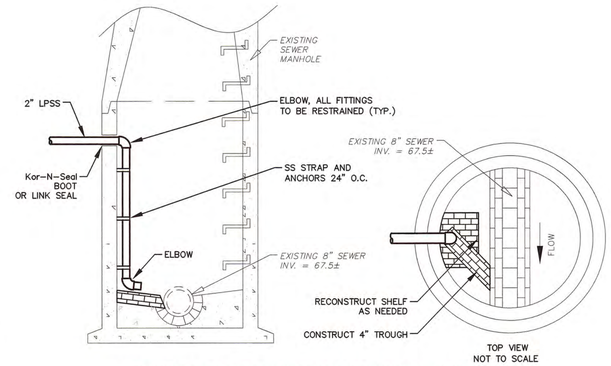
IN-LINE FLUSHING MANHOLE ELEVATION VIEW

NOT TO SCALE



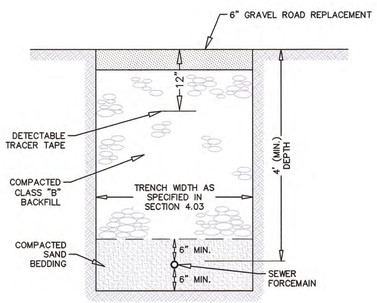
TERMINAL FLUSHING MANHOLE ELEVATION VIEW

NOT TO SCALE



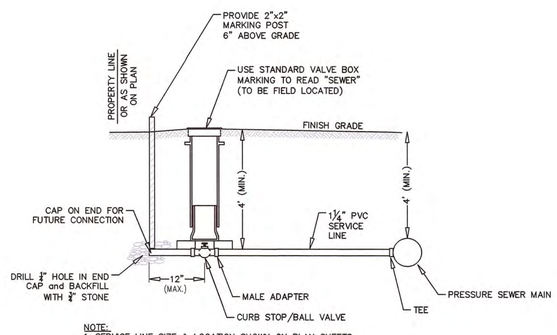
INSIDE DROP CONNECTION SEWER MANHOLE DETAIL

NOT TO SCALE



PRESSURE SEWER TRENCH DETAIL

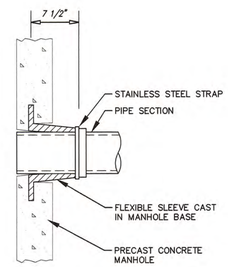
NOT TO SCALE



NOTE:
1. SERVICE LINE SIZE & LOCATION SHOWN ON PLAN SHEETS.
2. VALVE BOX SHALL BE LOCATED A MINIMUM OF 12" OFF OF TRAVELED WAY.

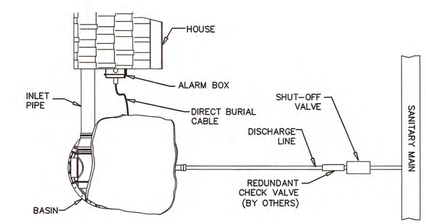
TYPICAL SERVICE CONNECTION TO PRESSURE MAIN DETAIL

NOT TO SCALE



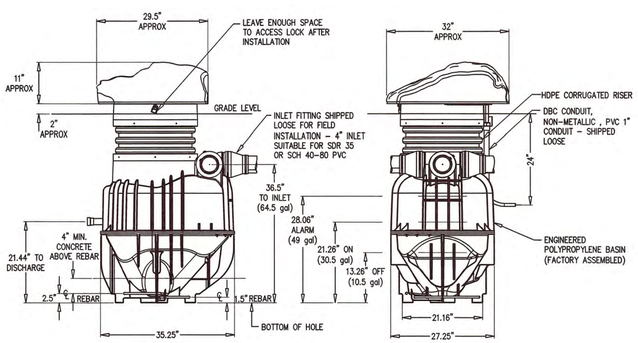
MANHOLE SEAL DETAIL (FLEXIBLE SLEEVE)

NOT TO SCALE



AERIAL VIEW OF INSTALLATION/COMPONENTS SIMPLEX, EcoTRAN SYSTEM, OGP

NOT TO SCALE

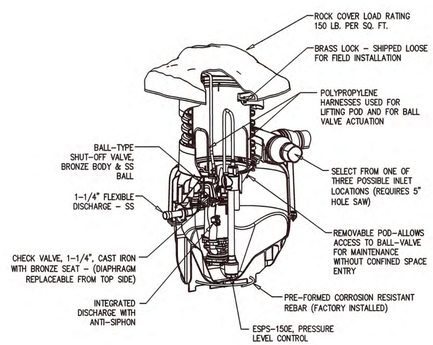


CRANE® PUMPS & SYSTEMS

BARNES® PRESSURE SYSTEMS

WWW.BARNES-PS.COM

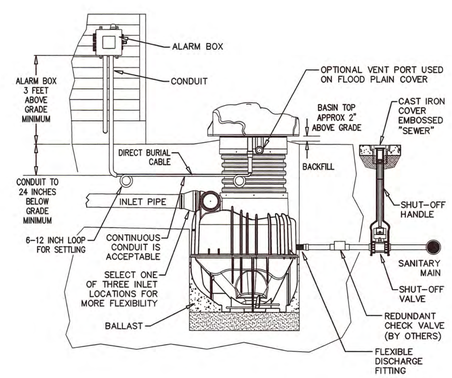
AS A RESULT OF BARNES CONSTANT PRODUCT IMPROVEMENT PROGRAM, PRODUCT CHANGES MAY OCCUR. AS SUCH, BARNES RESERVES THE RIGHT TO CHANGE PRODUCT WITHOUT PRIOR WRITTEN NOTIFICATION



SIMPLEX, EcoTRAN SYSTEM, OGP

NOT TO SCALE

NOTE: DUPLEX PUMP SYSTEM TO BE USED FOR CONNECTIONS WITH MORE THAN 5 BEDROOMS.



ELEVATION VIEW OF INSTALLATION/COMPONENTS SIMPLEX, EcoTRAN SYSTEM, OGP

NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN, JR.
CIVIL
No. 37071
REGISTERED PROFESSIONAL ENGINEER

1-29-20

Prepared By:
BRACKEN ENGINEERING, INC.
49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2292
19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

SEWER EXTENSION DESIGN
IN NANTUCKET, MASSACHUSETTS
Prepared For:
17 FOLGER AVENUE REALTY TRUST
#17, 19 & 21 FOLGER AVENUE
MAP 80 PARCEL 151

No.	Date	Revision Description	By

Date:	Drawn:	Checked:	Sheet:
JANUARY 29, 2020	RMM/BEI	DFB/AMG	3 of 3

LEC

WETLANDS WILDLIFE WATERWAYS

Notice of Intent Application

January 30, 2020

Subject Property
23 & 25 Wauwinet Road
Map 20, Parcels 36 & 80
Nantucket, Massachusetts

Applicant/Property Owner
Nantucket Island School of Design and the Arts, Inc. (NISDA)
P.O. Box 1848
Nantucket, MA 02554

LEC Environmental Consultants, Inc.

12 Resnik Road, Suite 1
Plymouth, MA 02360
508-746-9491
508-746-9492 fax

www.lecenvironmental.com

January 30, 2020

Email/Hand Delivery

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent Application [LEC File #: BrEI\17-392.01]
23 & 25 Wauwinet Road
Map 20, Parcels 36 & 80
Nantucket, Massachusetts

Dear Members of the Commission:

On behalf of the Applicant, Nantucket Island School of Design and the Arts, Inc., (NISDA), LEC Environmental Consultants, Inc., (LEC) is submitting this Notice of Intent (NOI) Application to relocate a portion of the existing driveway and conduct drainage improvements on the above-referenced subject parcels. Proposed work activities occur within Bordering Vegetated Wetlands (BVW), Bank, Land Subject to Coastal Storm Flowage (LSCSF), and/or 100-foot Buffer Zones protected under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations* (*Bylaw*). Wetland replication and stormwater management are proposed as mitigation for the proposed driveway relocation. Details of the proposed project are depicted on the *Proposed Site Plan,* prepared by Bracken Engineering, Inc., dated January 27, 2020. A Waiver is concurrently requested.

Enclosed please find the following three checks made payable to the Town of Nantucket: Seven Hundred and Eighty-Seven Dollars and Fifty Cents ($787.50) for the town portion of the WPA fee, Two Hundred Dollars ($200.00) for the Town Consultant fee, and Twenty-Five Dollars ($25.00) for the town *Bylaw* fee. A check made payable to *The Inquirer and Mirror* ($335.10) has also been submitted for the legal advertising fee. The state portion of the WPA fee ($762.50) has been forwarded to the DEP Lockbox.

Thank you for your consideration of this Application. We look forward to meeting with you at the February 19, 2020 Public Hearing to discuss the project further. If you should have any questions or require additional information, please do not hesitate to contact me at 508-746-9491.

Sincerely,

LEC Environmental Consultants, Inc.

Brian T. Madden
Wildlife Scientist

cc: DEP SERO; NISDA; Bracken Engineering, Inc.

i. WPA Form 3 – Notice of Intent
ii. Affidavit of Service
iii. Letter to Abutters
iv. Abutter Notification Form
v. Certified List of Abutters

Wetland Resource Area Analysis and Report

1. Introduction 1

2. General Site Description 1
2.1 Floodplain Designation 3
2.2 Natural Heritage and Endangered Species Program Designation 3

3. Wetland Resource Areas 3
3.1 Bordering Vegetated Wetlands/Vegetated (Freshwater) Wetlands 3
3.2 Bank 4
3.3 Land Subject to Coastal Storm Flowage 5

4. Proposed Project 5
4.1 Driveway Relocation 5
4.2 Wetland Replication 6
4.3 Drainage Improvements 7

5. Waiver Request 8

6. Summary 9

Literature Referenced

Appendices

Appendix A
Locus Maps
Figure 1: USGS Topographic Map
Figure 2: Aerial Orthophoto
Figure 3: FEMA Flood Insurance Rate Map
Figure 4: NHESP Map

Appendix B
Photographs

Appendix C
Stormwater Report, Prepared by Bracken Engineering, Inc., Dated January 29, 2020

Appendix D
Proposed Site Plan, Prepared by Bracken Engineering, Inc., Dated January 27, 2020

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

23 & 25 Wauwinet Road — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41°18'22.45"N — d. Latitude
70° 0'28.69"W — e. Longitude

Map 20 — f. Assessors Map/Plat Number
Parcels 36 & 80 — g. Parcel /Lot Number

2. Applicant:

Kathy — a. First Name
Kelm — b. Last Name
Nantucket Island School of Design and the Arts, Inc. (NISDA) — c. Organization
P.O. Box 1848 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-228-9248 — h. Phone Number
508-228-3648 — i. Fax Number
nisdaartsnantucket@nisda.org — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Brian — a. First Name
Madden — b. Last Name
LEC Environmental Consultants, Inc. — c. Company
12 Resnik Road, Suite 1 — d. Street Address
Plymouth — e. City/Town
MA — f. State
02360 — g. Zip Code
508-746-9491 — h. Phone Number
508-746-9491 — i. Fax Number
bmadden@lecenvironmental.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$1,550.00 — a. Total Fee Paid
$762.50 — b. State Fee Paid
$787.50 — c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

A. General Information (continued)

6. General Project Description:

Proposed driveway relocation and drainage improvements within BVW, LSCSF, and 100-foot Buffer Zone, including wetland replacement.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other *Design & Arts facility*

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	10132 & 18379
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☒ Bank	40± (temporary/clean-up) 1. linear feet	40± (new created channel) 2. linear feet
b. ☒ Bordering Vegetated Wetland	580± 1. square feet	1,160± 2. square feet
c. ☒ Land Under Waterbodies and Waterways	20± (temporary/clean-up) 1. square feet 3. cubic yards dredged	20± (new created channel) 2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	2,200± 1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW | b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings | b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   8/1/17
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☒ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Nantucket
City/Town

D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Proposed Site Plan
a. Plan Title

Bracken Engineering, Inc.
b. Prepared By

Alan Grady
c. Signed and Stamped by

1/27/2020
d. Final Revision Date

1:30
e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

14852
2. Municipal Check Number

1/14/2020
3. Check date

14848
4. State Check Number

1/14/2020
5. Check date

Bracken Engineering, Inc.
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 an
The Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Kathy Kelm for NISDA
1. Signature of Applicant

1/15/2020
2. Date

3. Signature of Property Owner (if different)

4. Date

Bud Mallon
5. Signature of Representative (if any)

1/28/2020
6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a copy of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A. Applicant Information

1. Location of Project:

23 & 25 Wauwinet Road	Nantucket
a. Street Address	b. City/Town
14848	$762.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Kathy	Kelm
a. First Name	b. Last Name

c. Organization: Nantucket Island School of Design and the Arts, Inc. (NISDA)

d. Mailing Address: P.O. Box 1848

Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code

508-228-9248	508-228-3648	nisdaartsnantucket@nisda.org
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat 3.c. Driveway	1	$1,050.00	$1,050.00
Cat 2.j. Drainage improvements (other)	1	$500.00	$500.00

Step 5/Total Project Fee: $1,550.00

Step 6/Fee Payments:

Total Project Fee:	$1,550.00 a. Total Fee from Step 5
State share of filing Fee:	$762.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$787.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

1. Introduction

On behalf of the Applicant, Nantucket Island School of Design and the Arts, Inc., (NISDA), LEC Environmental Consultants, Inc., (LEC) is submitting this Notice of Intent (NOI) Application to relocate a portion of the existing driveway and conduct drainage improvements on NISDA's Sea View Farm Art Center property. The northerly portion of the existing driveway connecting to Wauwinet Road is located on the abutting parcel, but appears to have been in use for many years, possibly pre-dating NISDA's acquisition of the properties in 1982. Per the abutter's request, the driveway is proposed to be relocated on-site, and consequently will impact the northerly edge of the Bordering Vegetated Wetland (BVW). The Applicant is proposing to provide 2:1 wetland replication (replacement) and stormwater management as mitigation for the driveway. Furthermore, the Applicant is proposing drainage improvements, including installation of a foundation drain within the slab of the existing barn. A drain line will extend westerly to a grass-lined swale before discharge to the Wetland Replication Area.

Proposed work activities occur within BVW, Bank, Land Subject to Coastal Storm Flowage (LSCSF), and/or 100-foot Buffer Zones protected under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations* (*Bylaw*). A Waiver is concurrently being requested for the proposed work activities.

The following NOI Application provides a description of the existing site conditions, Wetland Resource Areas, proposed project, and mitigating measures proposed to protect the interests and values of the Wetland Resource Areas enumerated within the above-referenced statutes. Details of the proposed project are depicted on the *Proposed Site Plan,* prepared by Bracken Engineering, Inc., dated January 27, 2020 (Appendix D).

2. General Site Description

The 2.0± acre NISDA Sea View Farm Art Center property is composed of two subject parcels located east of Polpis Harbor and Wauwinet Road between Chase Lane (south) and Eat Fire Spring Road (north) (Appendix A, Figures 1 and 2). Developed single-family residential properties exist to the south, east, and north. Wetland areas associated with Polpis Harbor occur to the west, immediately across Wauwinet Road.

The property is currently improved by an art school/studio facility (converted dairy barn), silos, covered pavilion, and barn; surrounded by lawn and landscaping. A looping dirt driveway provides access off Wauwinet Road, connecting to parking areas and exiting onto Wauwinet Road to the north. BVW occupies the westerly portion of the subject parcel abutting Wauwinet Road. Split rail fencing extends along the southerly portion of the driveway, extending out along Wauwinet Road. The Soil Absorption System (SAS) on the property has been recently updated with a new I/A system featuring a MicroFAST denitrification unit greater than 100 feet from BVW in accordance with a Determination of Applicability issued by the Commission in April 2019.

An intermittent stream flows in a westerly direction immediately south of the existing barn. BVW associated with the stream occurs to the east of the barn. The easterly portion of the barn (on slab) experiences minimal groundwater seepage.

The intermittent stream flows off-site, southwest of the barn through culverted and open-air channel section on the southerly abutting parcel before flowing through a 12" diameter culvert that extends under NISDA's driveway, and discharges into the BVW west of the art school/studio facility. The outlet is primarily blocked/clogged with sediment and organic debris. Historic aerials indicate that a farm pond was previously present within the southwesterly portion of the dairy farm. Under existing conditions, the former farm pond is now occupied by an emergent marsh dominated by cattails (*Typha* spp.) and herbaceous vegetation, surrounded by woody shrubs and vine entanglements (see below).

Two culverts extend under Wauwinet Road, draining the BVW. The southerly 12" diameter culvert was recently cleaned out by the DPW; however, the northerly 8" diameter culvert was not, and is mostly blocked/clogged with sediment, restricting flow. The majority of stream flow through the BVW discharges from the northerly 8" diameter culvert. The edge of the primary stream channel/standing water is depicted on the *Proposed Site Plan*.

Upland vegetation between developed conditions and downgradient wetlands are primarily occupied by scattered privet (*Ligustrum* spp.), bush honeysuckle (*Lonicera* spp.), blackberry (*Rubus* spp.), groundsel tree (*Baccharis halimifolia*), and fox grape (*Vitis labrusca*) entanglements along with scattered black cherry (*Prunus serotina*) trees.

2.1 Floodplain Designation

According to the June 9, 2014, Federal Emergency Management Agency Flood Insurance Rate Map for the Town of Nantucket (25019C0092G), the majority of the site is located within Zone X, *Areas determined to be outside the 0.2% annual chance flood* (Appendix A, Figure 3). Flood Zone AE (El 7) extends minimally across Wauwinet Road onto the westerly portion of the property, as depicted on the *Proposed Site Plan*.

2.2 Natural Heritage and Endangered Species Program Designation

According to the 14th edition of the Massachusetts *Natural Heritage Atlas* (effective August 1, 2017) published by the Natural Heritage & Endangered Species Program (NHESP), the project site does not occur within an Estimated Habitat of Rare Wildlife and Priority Habitat of Rare Species (Appendix A, Figure 4).

3. Wetland Resource Area Descriptions

On-site Wetland Resource Areas include Bordering Vegetated Wetland (BVW)/ Vegetated (Freshwater) Wetlands, Bank, and Land Subject to Coastal Storm Flowage, as described below.

3.1 Bordering Vegetated Wetland / Vegetated (Freshwater) Wetland

Bordering Vegetated Wetlands (BVW) are defined in 310 CMR 10.55(2) as *freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes. In these areas soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of BVW is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist.*

A vegetated Freshwater Wetland is defined within Section 1.02 of the Nantucket *Wetlands Protection Regulations* as a *wet meadow, freshwater marsh, swamp, bog, pond, lake, creek, or stream; an area of low topography where ground water, flowing water, standing surface water, or ice provides a significant part of the supporting substrate for a plant community for at least five months a year; characterized by emergent and submergent plant communities in inland waters; and/or where depth to high groundwater is within 18 inches of the ground surface, and/or exhibits hydric soil characteristics and includes that portion of any inland bank which touches any inland waters. Freshwater*

wetlands are not defined to include drainage facilities constructed to include wetland vegetation as treatment for stormwater runoff.

LEC demarcated the BVW boundaries based on observations of the existing plant communities, using the "fifty percent criteria" to determine dominance of wetland/upland vegetation, the interpretation of soil characteristics, and other indicators of hydrology, in accordance with the principals of DEP's handbook, *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act* (March 1995), the *Field Indicators for Identifying Hydric Soils in New England-Version 4* (2017), and the criteria set forth in 310 CMR 10.55(2) and the *Bylaw*, specifically analyzing the depth of high groundwater within 18 inches of the ground surface. Field Data Forms were previously submitted with the 2019 Request for Determination of Applicability for the septic upgrade.

The BVW within the westerly portion of the subject parcel is composed of emergent marsh and scrub shrub wetland habitat conditions. The southeasterly portion of the BVW is occupied by cattails and miscellaneous herbaceous species, including, but not limited to goldenrods (*Solidago* spp.), soft rush (*Juncus effusus*), sensitive fern (*Onoclea sensibilis*), and sedges (*Carex* spp.). Clusters and individuals of winterberry (*Ilex verticillata*), arrowwood (*Viburnum dentatum*), groundsel tree, privet, and blackberry, along with fox grape entanglements occur within the outer perimeter of the BVW. A meandering stream channel extends from the inundated cattail marsh pocket to the 8" diameter culvert (outlet).

BVW southwest of the barn (flags B1-B3) is largely vegetated by privet with highbush blueberry (*Vaccinium corymbosum*), winterberry, arrowwood, bush honeysuckle, and privet shrubs overhanging the 1-3± feet wide by 6-12± inches deep intermittent stream.

3.2 Bank

Bank is defined at 310 CMR 10.54(2) as *the portion of the land surface which normally abuts and confines a water body. The upper boundary of a Bank is the first observable break in the slope of the mean annual flood level, whichever is lower. The lower boundary of a Bank is the mean annual low flow level.*

Inland Bank under the *Bylaw* is defined as *the portion of land surface that normally abuts or confines a water body. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, stone, or sand. The physical characteristics of a bank, as well as its location, are critical to the protection of wetland interests. The upper boundary of a bank is the first observable break in slope above the ten-year flood level.*

The lower boundary of a bank is the annual high water elevation of the water body. A bank may be created by man and/or made of man-made materials.

Bank associated with the intermittent stream south of the barn is demarcated by flags 1-6, coincident with the well-defined embankment. As stated above, highbush blueberry, winterberry, arrowwood, bush honeysuckle, and privet shrubs overhang the 1-3± feet wide by 6-12± inches deep intermittent stream.

Bank associated with the intermittent stream within the interior of the westerly BVW varies, but averages 2-6 inches in height. The aforementioned herbaceous vegetation and fox grape entanglements abut the northerly flowing channel varying between 1-3 feet in width.

Land Under the Water is also associated with the intermittent streams and is composed of sandy to mucky substrate.

3.3 Land Subject to Coastal Storm Flowage

LSCSF is defined at 310 CMR 10.04 as *land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, which ever is greater*.

The landward boundary of LSCSF is contiguous with El. 7 per the June 9, 2014, Federal Emergency Management Agency Flood Insurance Rate Map for the Town of Nantucket (25019C0092G), minimally extending on the westerly portion of the subject parcel.

4. Proposed Project

NISDA is proposing to relocate the existing driveway onto the Sea View Farm Art Center property at the behest of the northerly abutter, with wetland replication and drainage improvements.

4.1 *Driveway Relocation*

The relocated 10-foot wide gravel driveway will extend immediately parallel to the northerly property line, connecting to the portion of the existing driveway on-site. The off-site driveway will be abandoned and allowed to naturally revegetate. A split rail fence will be installed along the northerly edge of the driveway to ensure no further encroachment on the abutting parcel.

A 4-foot wide grass channel/biofilter swale will extend along the southerly portion of the driveway. The driveway will be pitched for surface water to drain into the swale. The swale will be reseeded with New England Wetland Plants, Inc.'s "New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites" (or Conservation-approved equivalent). This seed mix contains a "selection of native grasses and wildflowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. It is an appropriate seed mix for ecologically sensitive restorations that require stabilization as well as long-term establishment of native vegetation. This mix is particularly appropriate for detention basins that do not hold standing water. Many of the plants in this mix can tolerate infrequent inundation, but not constant flooding."

The proposed driveway location will alter the northerly tip of the BVW, totaling 580± s.f. Erosion control barriers will be installed along the southerly edge of the grass channel/ biofilter swale to contain work activities and prevent sedimentation/erosion.

4.2 *Wetland Replication*

The Applicant is proposing 2:1 wetland replacement. The 1,160± sf "Wetland Replication Area" is proposed along the southerly edge of the BVW within existing lawn area. Wetland replication activities are proposed to be conducted in accordance with the DEP's *Inland Wetland Replication Plan Guidelines* (March 2002) and the criteria enumerated within 310 CMR 10.55 (4)(b) and the *Bylaw*.

Prior to the start of work, straw waddles (or similarly approved) will be placed along the wetland boundary abutting the driveway. Additional erosion control barriers (e.g., silt fencing) will be placed along the northerly edge of the driveway entrance.

Soil material within the "Proposed Wetland Replication Area" will be excavated 6-12± inches below the existing grade of the adjacent BVW. Concurrent with the excavation, the 20± foot section of the 12" diameter culvert extending from stone headwall north of the driveway (see Photograph 4, Appendix B), will be removed. A 1-2± foot wide by 1± foot deep stream channel will be created from the new outlet, replacing the culvert. A rip rap splash pad will be installed at the outlet to prevent scour. Additional erosion control barriers (e.g., straw bales) will be placed at the former culvert outlet and along sections of the recreated channel functioning as check dams. The stream embankments will be reseeded with the native seed mix specified below. As necessary, biodegradable blankets will be utilized to stabilized the recreated stream embankments.

Following excavation of the "Proposed Wetland Replication Area," 6-12± inches of clean organic topsoil will be introduced to coincide with the existing grades similar to those within the adjacent wetland. A small berm will be left along the southerly edge of the "Proposed Wetland Replication Area" to provide separation between the existing driveway and expanded BVW. The split rail fence will be relocated on the small berm.

The "Proposed Wetland Replication Area" will be planted with highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), groundsel tree (*Baccharis halimifolia*), and sweet pepperbush (*Clethra alnifolia*); 2-3 feet minimum, 3-5 feet on-center. The expanded BVW will be reseeded with New England Wetland Plants, Inc.'s "New England Wetmix (Wetland Seed Mix)" composed of a mix of native grasses, sedges, rushes, and wildflowers.

Temporary irrigation (e.g., drip line or movable stands) may be used, as necessary; however, not anticipated with the anticipated interception of high groundwater.

All wetland replication activities shall be conducted under the supervision of a wetland scientist. Monitoring site evaluations and reports with photographs shall be submitted to the Commission following the first and second growing seasons upon completion of initial wetland replication activities. The monitoring reports shall document vegetative health and cover to ensure 75% survivorship and include an assessment of the overall status of the replication area and recommendations (e.g., invasive species management, plant replacement, etc.).

4.3 *Drainage Improvements*

To address the groundwater seepage within the existing barn, a foundation drain will be installed within the interior of the barn. An Interior Foundation Drain Detail is depicted on the *Proposed Site Plan*. All work activities will be confined within the barn itself.

The new drain line will extend westerly from the barn. Silt fencing will be installed between the drain line exiting the barn and the southerly, downgradient intermittent stream. The new drain line will continue under the existing driveway before discharging to a Rip Rap splash pad and grass-lined swale. The clean discharge will either infiltrate naturally or drain into the wetland replication area.

Furthermore, accumulated sediment and debris at the inlet to the 8" diameter culvert (not cleaned out by DPW) will be removed by hand. Any obstructions within 20± feet of the inlet will be removed by hand to reestablish proper channel flow through the culvert.

5. Waiver Request

As stated within the *Bylaw*, *Vegetated Wetlands or Land within 100 feet of Vegetated Wetlands shall be presumed significant to the Interests Protected by the Bylaw*. Furthermore, *proposed projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to vegetated wetlands.*

Due to existing site conditions and property lines, these performance standards cannot be fully met for the relocated driveway, wetland replication, and drainage improvements. Consequently, the Applicant is respectfully requesting a Waiver under Section 1.03 F.3.a): *the Commission may grant a waiver from these regulations when the Commission finds that, given existing conditions, the proposed project will not adversely impact the interests identified in the Bylaw and there are no reasonable conditions or alternatives that would allow that project to proceed in compliance with the regulations*; and c) *the Commission may grant a waiver from these regulations when the Commission finds that a project will provide a long-term net benefit/improvement to the resource area, provided any adverse effects are minimized by carefully considered conditions.*

To reiterate, the driveway is proposed to be relocated only at the behest of the northerly abutter. The driveway has been in use for numerous years, but is located off-site. NISDA has sought a land swap to no avail.

The northerly, "exit only" driveway is necessary to maintain proper egress and safe traffic flow for the art/design facility. The southerly, "enter only" driveway maintains poor site lines to on-coming traffic in either direction and is not safe for exit. Furthermore, there is limited area abutting the southerly entrance for an expanded driveway or double-barrel roadway along with stormwater management (e.g., drainage swale).

The proposed driveway relocation has been designed to minimize BVW impacts to the greatest extent practicable, while providing required stormwater management for the proposed redevelopment. A minimum 10-foot wide driveway is proposed immediately along the northerly property line. The grass channel/biofilter swale has also been reduced in width to four feet to minimize impacts, in comparison to a typical five-foot width. Additionally, the proposed footprint of the relocated driveway overlaps with the northerly tip to the BVW that is terrestrial in nature, does not experience inundation, and is primarily occupied by privet shrubs and fox grape entanglements. The groundsel tree

individuals that are located within the footprint will be replanted within the "Proposed Wetland Replication Area."

The proposed project will result in a long-term net benefit/improvement to the resource area through: 1) a net increase of BVW on-site via the 2:1 wetland replacement; 2) replacing the section of culvert with a restored, natural stream channel; 3) providing stormwater management where none exists; and 4) cleaning out the drainage channel and culvert inlet to restore natural flow.

For the reasons stated above, there are no reasonable alternatives for the relocated driveway and drainage improvements. The proposed project has been comprehensively designed to avoid adverse wetland impacts and provide a long-term net benefit/ improvement over existing conditions.

6. Summary

On behalf of the Applicant, NISDA, LEC is submitting this NOI Application to relocate the existing driveway onto the Sea View Farm Art Center property and provide wetland replication and drainage improvements. Proposed work activities occur within Bordering Vegetated Wetlands, Bank, Land Subject to Coastal Storm Flowage (LSCSF), and/or 100-foot Buffer Zones protected under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations*. A Waiver is concurrently being requested for the proposed work activities. As proposed, the project avoids adverse impacts to the Resource Areas and provides a long-term net benefit/ improvement over existing conditions.

Federal Emergency Management Agency Flood Insurance Rate Map, Town of Nantucket (25019C0092G) effective June 9, 2014.

Massachusetts Department of Environmental Protection, *Wetland Inland Replication Plan Guidelines*, March 2002.

Massachusetts Natural Heritage Atlas, 14th Edition. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Route 135, Westborough, MA 01581, http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm..

Massachusetts Wetlands Protection Act (M.G.L. c. 131, §. 40) and its implementing *Regulations* (310 CMR 10.00), www.state.ma.us/dep.

Sorrie, B. and Dunwiddie, P. 1996. *The Vascular and Non-Vascular Flora of Nantucket, Tuckernuck, and Muskeget Islands*. Massachusetts Audubon Society, Massachusetts Natural Heritage and Endangered Species Program, Nantucket Maria Mitchell Association, and The Natural Conservancy.

Town of Nantucket Bylaw (Chapter 136) and *Wetlands Protection Regulations*.

United States Department of Agriculture, Soil Conservation Service, in cooperation with Massachusetts Agricultural Experiment Station, Soil Survey for Nantucket County, Massachusetts, issued June 1979.

Appendix A

Locus Maps

Figure 1: USGS Topographic Map

Figure 2: Aerial Orthophoto

Figure 3: FEMA Flood Insurance Rate Map

Figure 4: NHESP Map

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 1: USGS Topographic Map

23 & 25 Wauwinet Road
Nantucket, Massachusetts

N

January 28, 2020

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 2: Aerial Orthophoto Map

23 & 25 Wauwinet Road
Nantucket, Massachusetts

N

January 28, 2020

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 3: FEMA Flood Insurance Rate Map

23 & 25 Wauwinet Road
Nantucket, Massachusetts

N

January 28, 2020

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 4: NHESP Map

23 & 25 Wauwinet Road
Nantucket, Massachusetts

N

January 28, 2020

Appendix B

Photographs

Photograph 1: Northeasterly view of proposed relocated driveway extending across northerly tip of BVW (12/13/19).

Photograph 1: Westerly view of proposed relocated driveway extending across northerly tip of BVW; off-site driveway to be abandoned (12/13/19).

Photograph 3: Location of proposed grassed drainage swale south of tree & pavilion (12/13/19).

Photograph 4: Proposed Wetland Replication Area and section of 12” diameter culvert to be removed from stone headwall (12/13/19).

Appendix C

Stormwater Report, Prepared by Bracken Engineering, Inc., Dated January 29, 2020

STORMWATER REPORT

FOR

23 & 25 Wauwinet Road
Map 20, Parcels 36 & 80
IN NANTUCKET, MA

PREPARED BY

BRACKEN ENGINEERING, INC.
19 OLD SOUTH ROAD
NANTUCKET, MA 02554

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN, JR.
CIVIL
No. 37071
REGISTERED PROFESSIONAL ENGINEER

Donald F. Bracken, Jr., P.E.

January 29, 2020

OBJECTIVE

To prepare a stormwater report and confirm compliance with the Stormwater Management Standards for a re-development project to the maximum extent practical. The project consists of relocating an existing gravel driveway. There will be no increase of impervious areas. A drainage system shall be designed to treat the driveway runoff within the area of the new driveway location.

EXISTING/PROPOSED CONDITIONS

The subject property is an 88,370± developed lot located on the east side of Wauwinet Road. It is comprised of an existing building, barn, silo, gravel driveways and lawn. The lot contains a bordering vegetated wetland (BVW) area and a portion of the lot falls within Land Subject to Coastal Storm Flowage.

A driveway that currently serves the property is located on the abutting lot which will be abandoned.

The proposed project consists of relocating a portion of the existing driveway onto the locus. This relocation will require filling a portion of the existing BVW and replicating this area in another location adjacent to the BVW.

A grass channel/biofilter swale is proposed at the edge of driveway to treat the driveway runoff prior to overflowing into the adjacent wetland. The volume of the channel shall contain the required Water Quality Volume (WQV).

SURFICIAL GEOLOGY

Soils within the project area as shown on the soil survey maps prepared by the Natural Resources Conservation Service are mapped as Klej and Pompton soils. These soils are classified as a NRCS Hydrologic Soil Group "B". See map and soil description attached to this report.

SURFICIAL HYDROLOGY

Groundwater elevations of the wetland area are controlled by a culvert under Wauwinet Road. Elevations in the wetland range from 4 to 6. The invert elevation of the culvert is 3.0+/-. Also included in the scope of the project is cleaning the culvert and re-establishing the channel to the culvert which has filled with sediment and has become overgrown with vegetation. Channel improvements will help maintain water levels below the elevation of the grass channel.

HYDROLOGIC MODELING

Due to the small project area, the fact that there is no increase of impervious area and this is a re-development project, hydrologic modeling was not performed. Calculations are attached to this report demonstrate that the grass channel contains the required WQV of ½" of runoff from the proposed gravel driveway area.

STORMWATER STANDARDS COMPLIANCE

Standard 1: No New Untreated Discharges

No new untreated discharges have been proposed. Runoff from the driveway is treated in a grass channel/biofilter swale.

Standard 2: Peak Rate Attenuation

The site is within an area subject to coastal storm flowage; therefore, this standard is not applicable. However, peak rates and volumes will be reduced under post development conditions with the use of the grass channel/biofilter swale.

Standard 3: Recharge

There is no net change or increase in driveway or impervious areas. Post development recharge will be equal to or greater than pre-development recharge with the grass channel which will offer some recharge.

Standard 4: Required Water Quality Volume

TSS removal worksheets have not been prepared for this project due to the fact that the grass channel/biofilter swale does not comply with all of the requirements to obtain TSS removal credit. This was designed to the maximum extent practical given the site constraints of working within an existing wetland area. The grass channel/biofilter swale is a considerable improvement over existing conditions.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

Project does not provide land uses with higher potential pollutant loads.

Standard 6: Critical Areas

The site does not discharge to any known critical areas.

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

The project is a redevelopment and has been designed to treat runoff to the maximum extent practice.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control.

A construction period pollution prevention plan has not been prepared since the proposed project disturbance is less than 1 acre.

Standard 9: Operation and Maintenance Plan

See attached O&M Plan.

Standard 10: Prohibition of Illicit Discharges

An Illicit Discharge Compliance Statement will be submitted by the owner to the conservation commission prior to a request for a Certificate of Compliance.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

---

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN, JR.
CIVIL
No. 37071
REGISTERED PROFESSIONAL ENGINEER

1-29-20

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☒ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☒ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- [x] Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- [ ] Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- [ ] Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- [ ] Soil Analysis provided.
- [ ] Required Recharge Volume calculation provided.
- [ ] Required Recharge volume reduced through use of the LID site Design Credits.
- [ ] Sizing the infiltration, BMPs is based on the following method: Check the method used.

  - [ ] Static
  - [ ] Simple Dynamic
  - [ ] Dynamic Field[1]

- [ ] Runoff from all impervious areas at the site discharging to the infiltration BMP.
- [ ] Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- [ ] Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- [x] Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

  - [ ] Site is comprised solely of C and D soils and/or bedrock at the land surface
  - [ ] M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - [ ] Solid Waste Landfill pursuant to 310 CMR 19.000
  - [x] Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

- [ ] Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- [ ] Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☒ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☐ Name of the stormwater management system owners;
- ☐ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

OPERATION & MAINTENANCE PLAN

Stormwater Management System

23 Wauwinet Road

Nantucket, Massachusetts

Dated: January 29, 2020

The Stormwater Management System employs Best Management Practices (BMPs) as set forth in the revised Massachusetts Stormwater Standards and Massachusetts structural BMPs, including this Operation and Maintenance Plan, to reduce the types and concentrations of contaminants contained within stormwater runoff. Structural BMP proposed is a grass channel/biofilter swale The drainage system will function to both remove contaminants and recharge the groundwater.

This Operation and Maintenance Plan is intended to identify the party or parties responsible for operation and maintenance of the drainage system and to set forth a schedule and tasks for inspections and maintenance.

Responsibility for Operation and Maintenance:

The applicant for this project is Nantucket Island School of Design and the Arts, Inc. The applicant, their designated representative, or future owners of the property shall be responsible for the continuous operation and maintenance of the systems or shall enter into an agreement with a qualified maintenance contractor to conduct the work.

The contractor shall have demonstrated capabilities in sediment removal, cleaning and maintenance of drainage structures, and shall have the equipment to physically remove the accumulated sediments and the ability to repair the structural components of the systems.

Maintenance Schedule and Tasks:

Grass Channel/Biofilter Swale- The system shall be inspected twice a year to ensure grass growth and look for signs of erosion. Accumulated sediment and trash to removed prior to mowing. Mowing to be done 4" above the bottom of the channel, no mowing below the 4" depth of the channel. Mowing blade to be set 3 to 4 inches above the ground. Grass to be mowed as required to limit grass height to 6'.

Operation & Maintenance Plan acknowledged/accepted

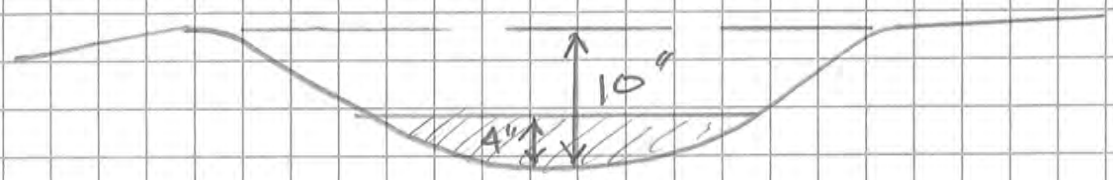
_____ _____

Applicant: Nantucket Island School of Design and the Arts, Inc. Date

BRACKEN ENGINEERING, INC.
Bourne, MA 508-833-0070
Nantucket, MA 508-325-0044

JOB 23 WAUWINET
SHEET NO. 1 OF 1
CALCULATED BY DFB DATE 1-29-20
CHECKED BY DATE
SCALE

WATER QUALITY VOLUME



WQV AT 4" DEPTH = 0.60 SF/LF

TOTAL LENGTH = 120'

120 (.60) = 72 CUBIC FEET (CF)

WATER QUALITY VOLUME TO BE TREATED:

120' GRAVEL DRIVE X 10' WIDTH X $\frac{1}{2}$"

= 50 C.F.

$\boxed{72 \text{ CF} > 50 \text{ CF}}$

23 Wauwinet Rd

Soil Map—Nantucket County, Massachusetts

Map Scale: 1:912 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

Nantucket County, Massachusetts

295A—Klej and Pompton soils, 0 to 3 percent slopes

KLEJ - Pompton
B SOIL

Map Unit Setting

National map unit symbol: 9971
Elevation: 10 to 120 feet
Mean annual precipitation: 41 to 48 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 175 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Klej and similar soils: 46 percent
Pompton and similar soils: 40 percent
Minor components: 14 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Klej

Setting

Landform: Outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loose sandy glaciofluvial deposits derived from granite and gneiss and/or firm fine-loamy lacustrine deposits and/or firm fine-loamy marine deposits

Typical profile

H1 - 0 to 26 inches: loamy sand
H2 - 26 to 52 inches: sand
H3 - 52 to 60 inches: sandy clay loam

Properties and qualities

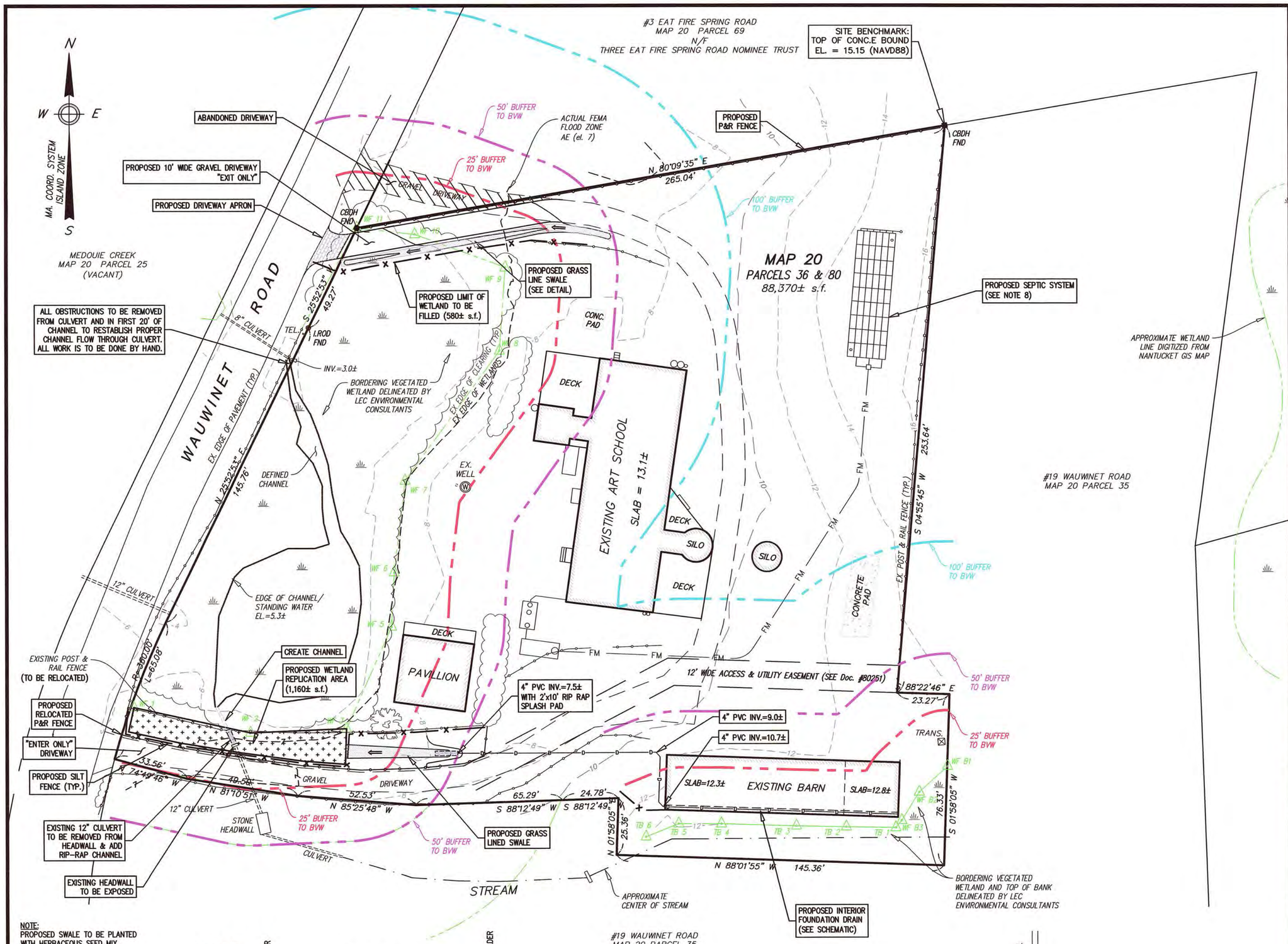
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)
Depth to water table: About 12 to 31 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

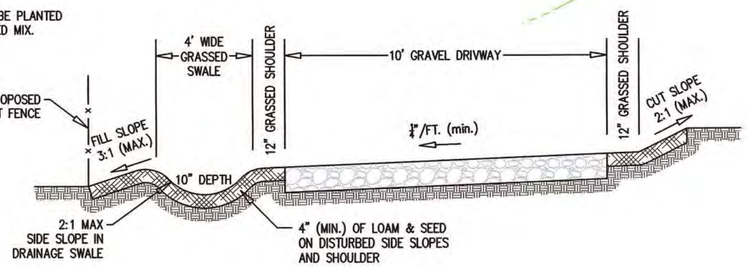
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D

Appendix D

Proposed Site Plan, Prepared by Bracken Engineering, Inc., Dated January 27, 2020



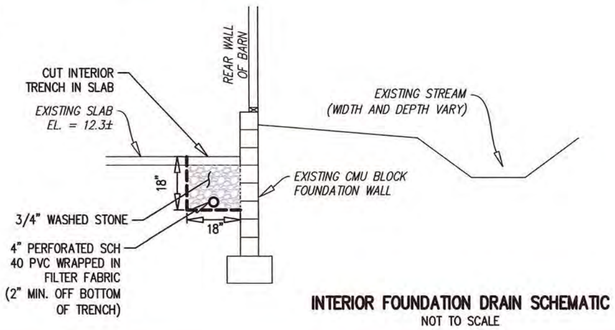
NOTE:
PROPOSED SWALE TO BE PLANTED WITH HERBACEOUS SEED MIX.



GRAVEL DRIVEWAY AND GRASS CHANNEL/BIOFILTER SWALE CROSS-SECTION
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN, JR.
CIVIL
No. 37071
PROFESSIONAL ENGINEER

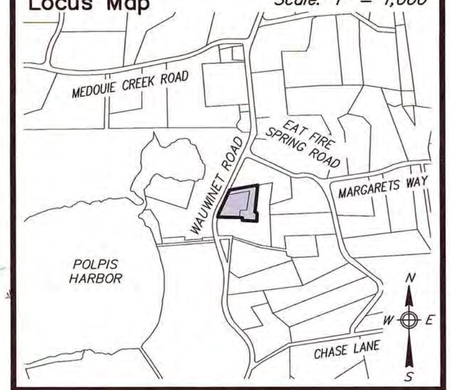
1-27-20



INTERIOR FOUNDATION DRAIN SCHEMATIC
NOT TO SCALE

Locus Map

Scale: 1" = 1,000'



Notes

1. LOCUS: #23 & #25 WAUWINET ROAD
   MAP 20 PARCEL 36 & 80
2. OWNER: NANTUCKET ISLAND SCHOOL OF DESIGN AND THE ARTS, INC.
   23 WAUWINET ROAD
   NANTUCKET, MA 02554
3. DEED REF: CERT. #10132 & #18379
4. PLAN REF: L.C. PLAN #6283-13 (LOT 105)
   L.C. PLAN #6283-12 (LOT 103)
5. LOCUS DOES FALL WITHIN SPECIAL FLOOD HAZARD ZONE "AE" (el. 7) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25019C-0092-G dated 06/09/2014.
6. LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE and ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE and PRIORITY HABITATS OF RARE SPECIES.
7. REFER TO SITE PLAN PREPARED BY CHARON ASSOCIATES, INC., DATED APRIL 20, 2000 AND ON FILE WITH THE BOARD OF HEALTH.
8. SEE APPROVED RDA, DATED APRIL 10, 2019 FOR WORK ASSOCIATED WITH THE SEPTIC SYSTEM.
9. SEE NOTICE OF INTENT APPLICATION FOR A DETAILED DESCRIPTION OF THE WETLAND REPLICATION AREA CONSTRUCTION.

PLAN SCALE

0 6 12 18 24 30 45 60 90

1 inch = 30 feet

Prepared By:

BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282

19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

PROPOSED SITE PLAN IN NANTUCKET, MASSACHUSETTS

Prepared For:

NANTUCKET ISLAND SCHOOL OF DESIGN AND THE ARTS, INC.

#23 & #25 WAUWINET ROAD
MAP 20 PARCELS 36 & 80

No.	Date	Revision Description	By
–	–	–	–

Date:	Drawn:	Checked:	Sheet:
JANUARY 27, 2020	RMM/BEI	DFB/AMG	1 of 1

S:\Autocad Drawings\Nantucket\Wauwinet Road\23 Wauwinet Road\23 Wauwinet Rd - Site Plan.dwg

NOTICE OF INTENT APPLICATION

FOR RELOCATION OF A DWELLING AND INSTALLATION OF A SWIMMING POOL WITH ASSOCIATED LANDSCAPE/HARDSCAPE WITHIN THE BUFFER ZONE TO A COASTAL BANK

At

84 POCOMO ROAD

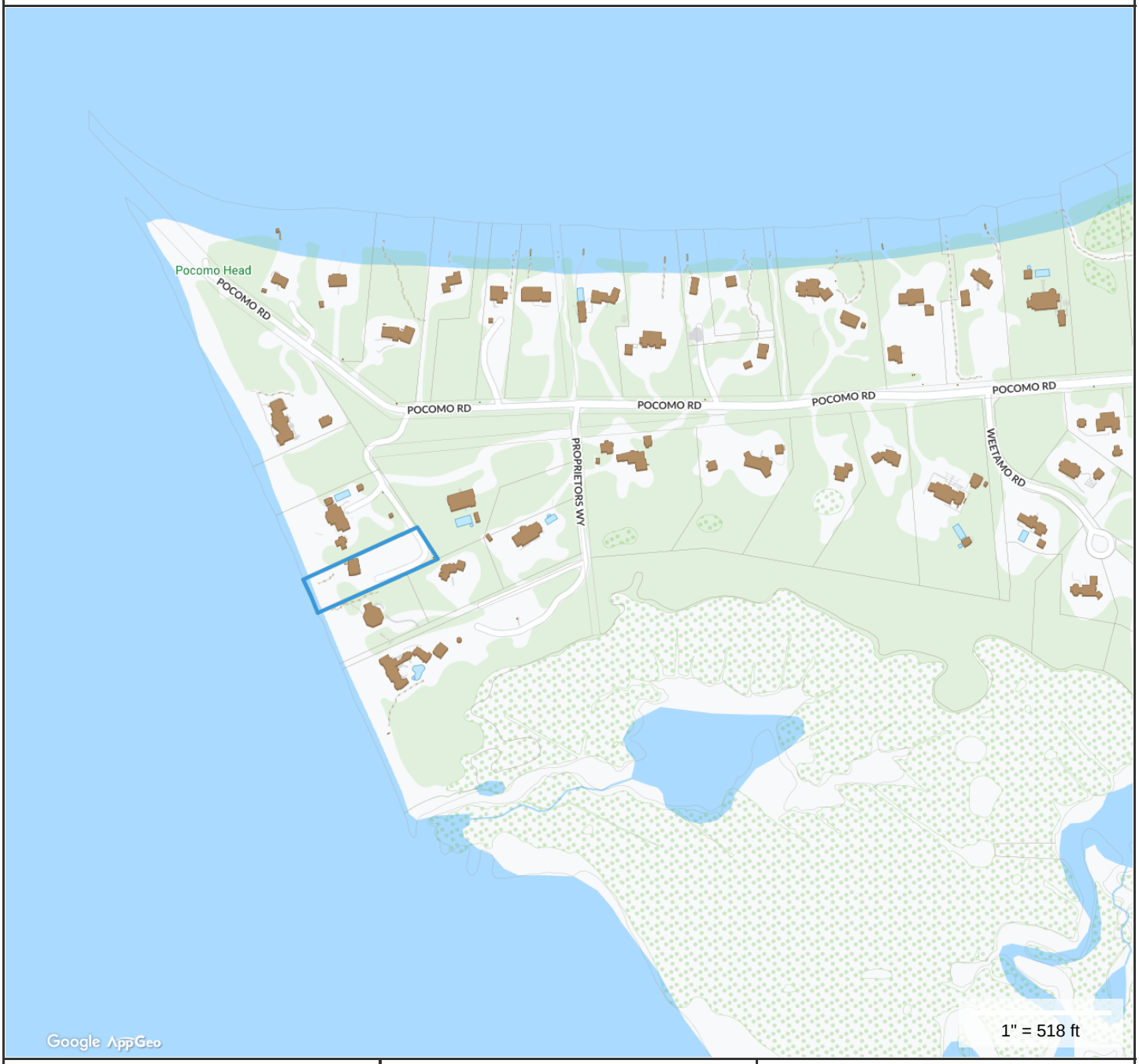
JANUARY 2020

Prepared For

NINA MARIA WEISSENBERGER
& CARLTON NEEL

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Locus Map



Property Information

Property ID	15 40
Location	84 POCOMO RD
Owner	NEEL CARLTON ETAL

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018

January 30, 2020

Ms. Ashley Erisman, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent Application
84 Pocomo Road
Map 15 Parcel 40

Dear Ms. Erisman:

On behalf of the property owners, Neel Carlton & Nina Maria Weissenberger, Nantucket Engineering & Survey, P.C. is submitting this Notice of Intent (NOI) to the Nantucket Conservation Commission for proposed activities within the jurisdiction of the Commission at the above referenced property (the "Site") in Nantucket, Massachusetts.

Proposed activities with the buffer zone consist of relocating an existing single-family dwelling further away from a coastal bank and construction of a pool with appurtenant hardscaping and landscaping.

Resource areas at the Site include Coastal Bank, Coastal Beach, Land Subject to Coastal Storm Flowage and Land Under the Ocean. No alteration is proposed to the Coastal Beach but it will be used as a working area during proposed Coastal Bank stabilization activities.

Attached are permit drawings, including plans showing a site locus, existing conditions including resource area locations, and proposed construction areas.

A completed WPA Form 3 – Notice of Intent is attached along with the NOI Wetland Fee Transmittal Form including checks for $42.50, 67.50, $25 and $200 to cover the WPA filing fee, Nantucket Wetland by-law fee and the Nantucket Expert Review fee. Also included is a check for $335.10 to the Inquirer & Mirror for publication of the notice of the public hearing.

Notification of this NOI filing was provided to all abutting property owners by certified mail. This property owner listing was obtained from the Town of Nantucket Assessor's office. Documentation of the notification is provided including a copy of the notification letter, the property owner listing and certified mail receipts.

Site Description

The Property is listed as Map 15, Parcel 40 by the Town of Nantucket Assessor's Office, located on the west side of Pocomo Road and fronts on Nantucket Harbor. The parcel contains a single-family dwelling served by an onsite septic system and well. The existing resource areas near to the proposed project include Bordering Vegetated Wetlands, Land Subject to Coastal Storm Flowage, Land Under the Ocean, Coastal Beach and a Coastal Bank. The boundaries of these

areas were previously approved by the Nantucket Conservation Commission. A review of the August 2018 "Massachusetts Natural Heritage Atlas", prepared by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), indicates that the work area is not within the known range of state listed rare wildlife species defined by the Estimated Habitat mapping.

No work is proposed in Nantucket Harbor (Land Subject to Coastal Storm Flowage), or below Mean High Water.

The Coastal Beach is located between the harbor and the existing Coastal Bank. No work proposed in this resource area.

The Coastal Bank is located between the Coastal Beach and the upland areas. No work proposed in this resource area.

Land Subject to Coastal Storm Flowage extends to the 100-year flood elevation of 7 (NAVD88). No work proposed in this resource area.

The project area is not located within National Heritage and Endangered Species Program (NHESP) Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife.

Project Description

The Applicant will retain an experienced contractor to perform the proposed work including relocating the existing single-family dwelling further away from a coastal bank and constructing a pool with appurtenant hardscaping and landscaping within the buffer zone.

Work Description

The applicant proposes to install the silt fencing at the limit of work, which will be maintaining in good condition throughout the project. The construction access for the project will be from the existing driveway. The existing house will be lifted, the foundation for the new location installed and the house relocated onto it. The swimming pool and hardscape will then be installed, followed by final site landscaping per the attached plans.

Conclusion

The work as proposed will not affect the ability of the resource areas to function as they currently do. The project will not result in an adverse impact on the areas or the interests protected by the Commission including flood control, erosion control, storm damage prevention, prevention of pollution, wildlife, and scenic views.

Sincerely,

Arthur D. Gasbarro, PE, PLS

Cc: MassDEP
Neel Carlton & Nina Maria Weissenberger

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
NANTUCKET
City/Town

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

84 Pocomo Road — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41d 18' 47" N — d. Latitude
70d 01' 48" W — e. Longitude

15 — f. Assessors Map/Plat Number
40 — g. Parcel /Lot Number

2. Applicant:

Carlton — a. First Name
Neel — b. Last Name
c. Organization
727 Church Road — d. Street Address
Villanova — e. City/Town
PA — f. State
19085 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Arthur D. — a. First Name
Gasbarro, PE, PLS — b. Last Name
Nantucket Engineering & Survey, P.C. — c. Company
20 Mary Ann Drive — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-825-5053 — h. Phone Number
i. Fax Number
art@nantucketengineer.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$110 — a. Total Fee Paid
$42.50 — b. State Fee Paid
$67.50 + $25 + $200 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The applicants are proposing to relocate an existing single-family dwelling further away from a coastal bank and construct a pool with appurtenant hardscaping and landscaping. Please refer to the attached Project Narrative and Site Plan for additional information.

7a. Project Type Checklist:

1. ☒ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Limited Project Driveway Crossing
4. ☐ Commercial/Industrial
5. ☐ Dock/Pier
6. ☐ Utilities
7. ☐ Coastal Engineering Structure
8. ☐ Agriculture (e.g., cranberries, forestry)
9. ☐ Transportation
10. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☐ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

NANTUCKET	C.26,808
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☒ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet	
	2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW _____ b. square feet of Salt Marsh _____

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☐ Yes ☒ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

8/1/17
b. Date of map

C. Other Applicable Standards and Requirements (cont'd)

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.C, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.d, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

1. c. Submit Supplemental Information for Endangered Species Review*

   1. ☐ Percentage/acreage of property to be altered:

      (a) within wetland Resource Area _____ percentage/acreage

      (b) outside Resource Area _____ percentage/acreage

   2. ☐ Assessor's Map or right-of-way plan of site

   3. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work ********

      (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

      (b) ☐ Photographs representative of the site

      (c) ☐ MESA filing fee (fee information available at: http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

      *Projects altering **10 or more acres** of land, also submit:*

      (d) ☐ Vegetation cover type map of site

      (e) ☐ Project plans showing Priority & Estimated Habitat boundaries

d. OR Check One of the Following

   1. ☐ Project is exempt from MESA review.
      Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

   2. ☐ Separate MESA review ongoing. _____ a. NHESP Tracking # _____ b. Date submitted to NHESP

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm, regulatory review tab). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

2. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only

b. ☐ Yes ☒ No If yes, include proof of mailing or hand delivery of NOI to either:

South Shore - Cohasset to Rhode Island, and the Cape & Islands:

Division of Marine Fisheries - Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

Division of Marine Fisheries - North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

3. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. ☐ Yes ☒ No

5. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

a. ☐ Yes ☒ No

6. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

2. ☐ A portion of the site constitutes redevelopment

3. ☐ Proprietary BMPs are included in the Stormwater Management System.

b. ☒ No. Check why the project is exempt:

1. ☒ Single-family house

C. Other Applicable Standards and Requirements (cont'd)

2. ☐ Emergency road repair
3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☐ List the titles and dates for all plans and other materials submitted with this NOI.

Site Plan to Accompany a Notice of Intent
a. Plan Title

Nantucket Engineering & Survey, P.C.
Arthur D. Gasbarro, PE, PLS
c. Signed and Stamped by

1/30/20
d. Final Revision Date

1" = 30'
e. Scale

Landscape Plans by Ahern LLC
f. Additional Plan or Document Title

1/21/20
g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2088	1/28/20
2. Municipal Check Number	3. Check date
2087	1/28/20
4. State Check Number	5. Check date
Nantucket Engineering & Survey, PC	
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Agent	1/29/20
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	1/29/20
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

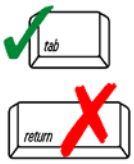
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Applicant:

a. First Name	b. Last Name
Carlton Nina Maria	Neel Weissenberger

c. Organization

d. Mailing Address: 727 Church Road

e. City/Town	f. State	g. Zip Code
Villanova	PA	19085

h. Phone Number	i. Fax Number	j. Email Address

2. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

3. Project Location:

a. Street Address	b. City/Town
84 Pocomo Road	Nantucket

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

The fee should be calculated using the following six-step process and worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Work on a Single-family Dwelling	1	$110	$110
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

Total Project Fee:	$110 + $25 + $200 a. Total Fee from Step 5
State share of filing Fee:	$42.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$67.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

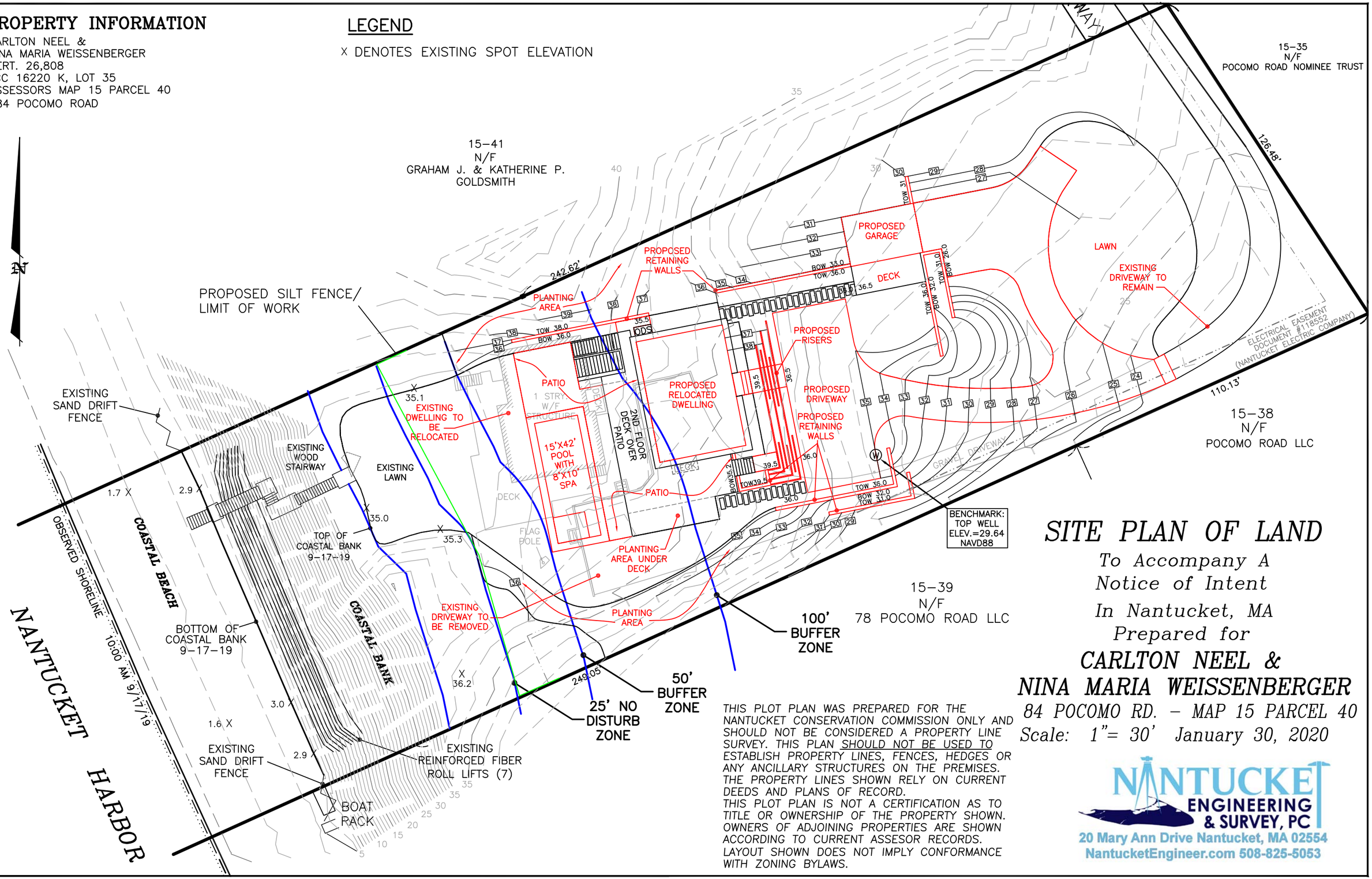
15 43
POCOMO RD
POCOMO RD
15 33
15 42
15 35
15 58
PROPRIETORS WY
15 41
15 36
15 40
15 38
15 39
41.314332,-70.0316

PROPERTY INFORMATION

CARLTON NEEL &
NINA MARIA WEISSENBERGER
CERT. 26,808
LCC 16220 K, LOT 35
ASSESSORS MAP 15 PARCEL 40
#84 POCOMO ROAD

LEGEND

X DENOTES EXISTING SPOT ELEVATION



SITE PLAN OF LAND

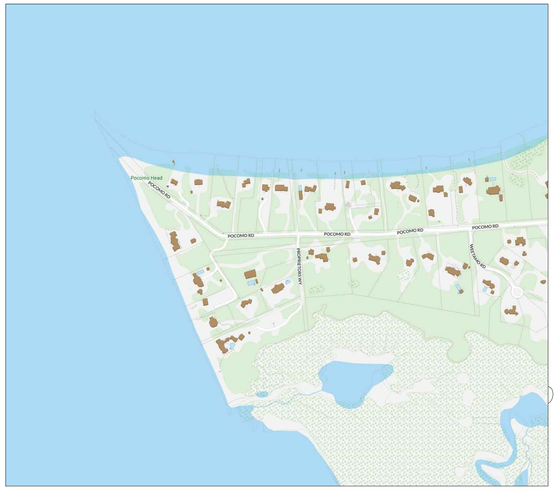
To Accompany A
Notice of Intent
In Nantucket, MA
Prepared for

CARLTON NEEL &
NINA MARIA WEISSENBERGER

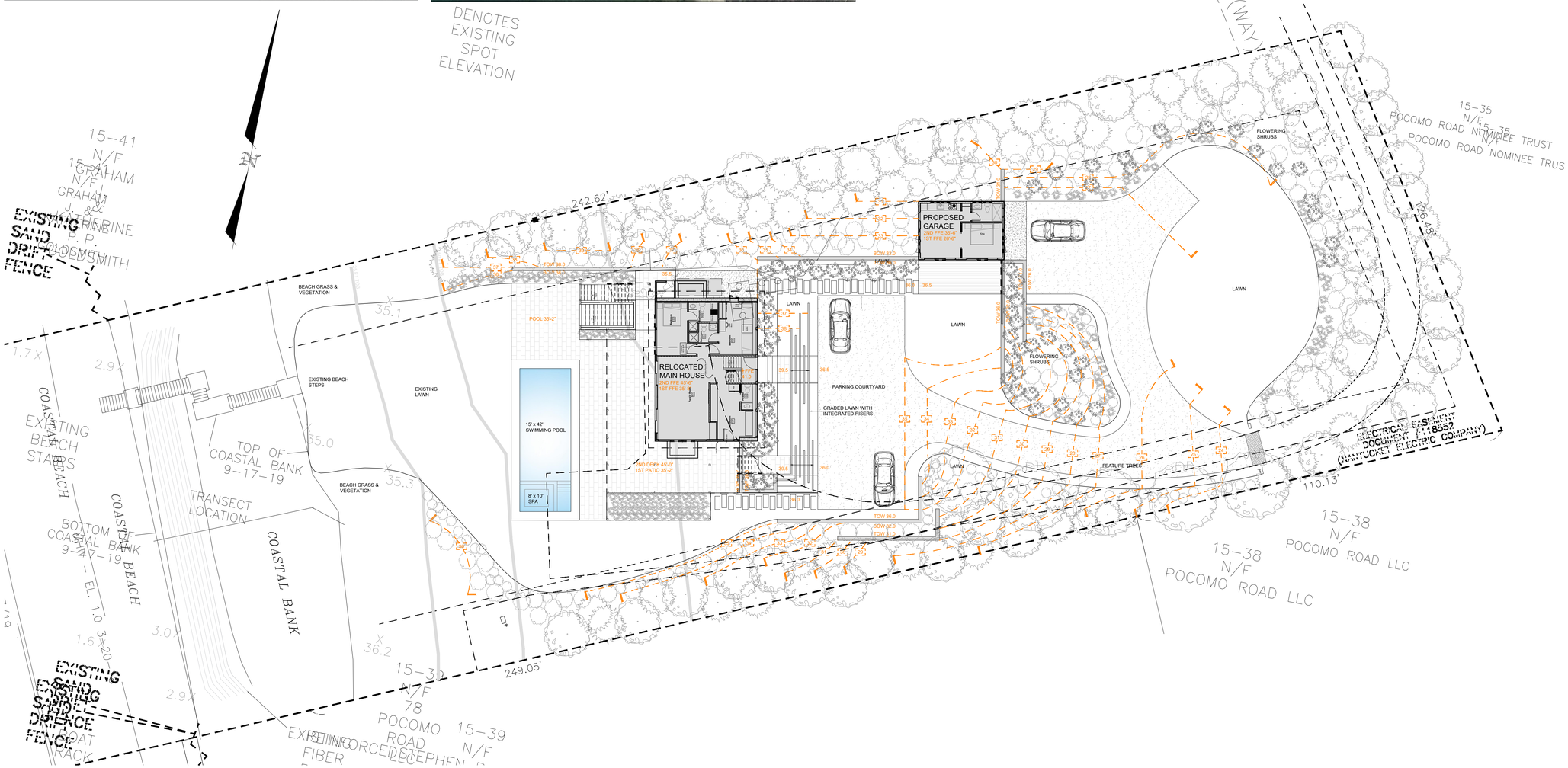
84 POCOMO RD. – MAP 15 PARCEL 40
Scale: 1"= 30' January 30, 2020

THIS PLOT PLAN WAS PREPARED FOR THE NANTUCKET CONSERVATION COMMISSION ONLY AND SHOULD NOT BE CONSIDERED A PROPERTY LINE SURVEY. THIS PLAN SHOULD NOT BE USED TO ESTABLISH PROPERTY LINES, FENCES, HEDGES OR ANY ANCILLARY STRUCTURES ON THE PREMISES. THE PROPERTY LINES SHOWN RELY ON CURRENT DEEDS AND PLANS OF RECORD.
THIS PLOT PLAN IS NOT A CERTIFICATION AS TO TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT ASSESOR RECORDS. LAYOUT SHOWN DOES NOT IMPLY CONFORMANCE WITH ZONING BYLAWS.

NANTUCKET ENGINEERING & SURVEY, PC
20 Mary Ann Drive Nantucket, MA 02554
NantucketEngineer.com 508-825-5053



DENOTES EXISTING SPOT ELEVATION



AHERN LLC
LANDSCAPE DESIGN STUDIO
PO Box 2213, Nantucket MA 02584
T (508) 333-5138 F (508) 325-4616
design@ahernllc.com

PROJECT

NEEL RESIDENCE

84 POCOMO RD NANTUCKET MA 02554

ARCHITECT

CHIP WEBSTER ARCHITECTURE
9 Amelia Drive, Nantucket MA 02554
T (508) 228 3600

SURVEYOR

NANTUCKET ENGINEERING & SURVEY
20 Mary Ann Drive Nantucket MA
T (508) 825-5053

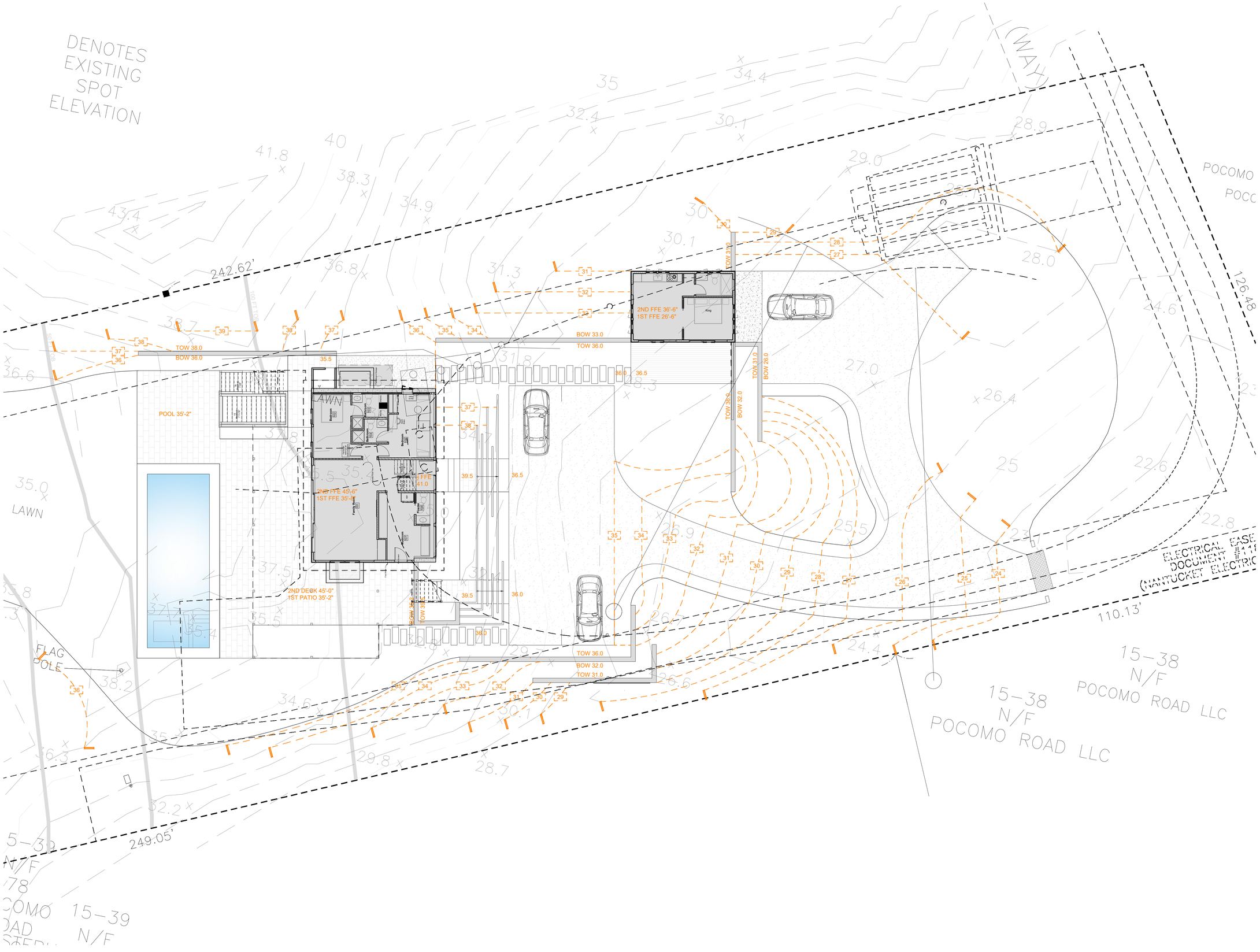
LANDSCAPE CONCEPTUAL PLAN

DRAWING INFO

DATE	JANUARY 21, 2020
SCALE	1/16" = 1' - 0"

PREVIOUS ISSUES

L.00



AHERN LLC
LANDSCAPE DESIGN STUDIO
PO Box 2213, Nantucket MA 02584
T (508) 333-5138 F (508) 325-4616
design@ahernllc.com

PROJECT

NEEL RESIDENCE

84 POCOMO RD NANTUCKET MA 02554

ARCHITECT

CHIP WEBSTER ARCHITECTURE
9 Amelia Drive, Nantucket MA 02554
T (508) 228 3600

SURVEYOR

NANTUCKET ENGINEERING & SURVEY
20 Mary Ann Drive Nantucket MA
T (508) 825-5053

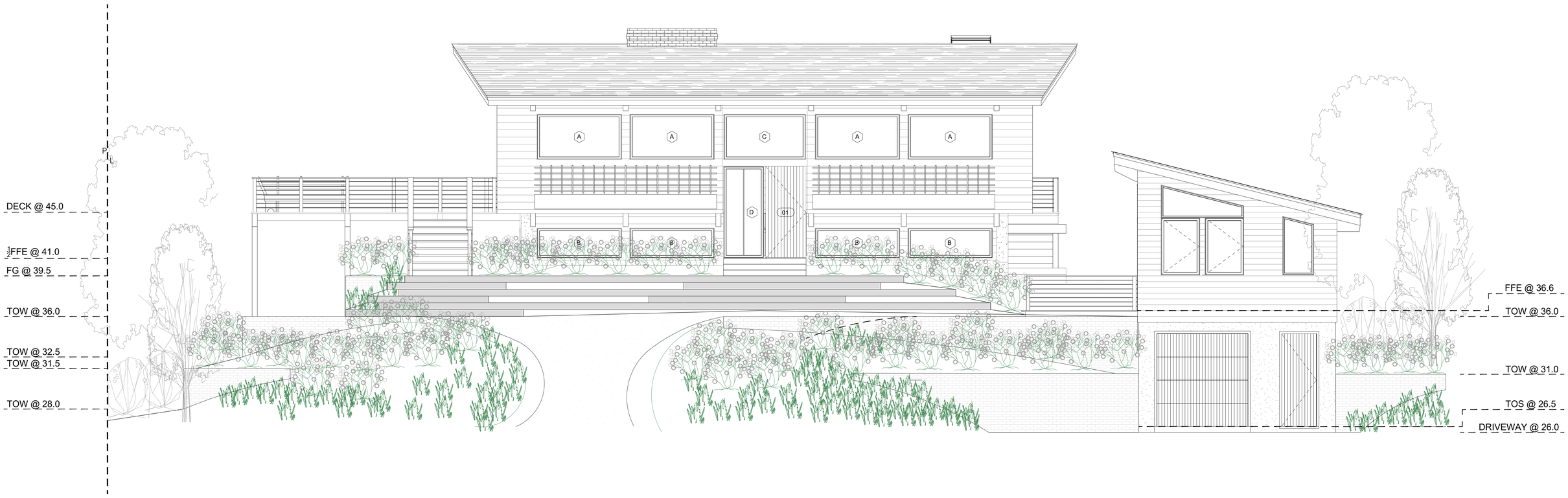
GRADING & UTILITY PLAN (progress)

DRAWING INFO

DATE	JANUARY 21, 2020
SCALE	1/16" = 1' - 0"

PREVIOUS ISSUES

L.02



AHERN LLC
LANDSCAPE DESIGN STUDIO
PO Box 2213, Nantucket MA 02584
T (508) 333-5138 F (508) 325-4616
design@ahernllc.com

NEEL RESIDENCE

84 POCOMO RD NANTUCKET MA 02554

ARCHITECT

CHIP WEBSTER ARCHITECTURE
9 Amelia Drive, Nantucket MA 02554
T (508) 228 3600

LANDSCAPE EAST ELEVATION (progress)

DRAWING INFO

JANUARY 21, 2020

1/4" = 1' - 0"

Nantucket SURVEYORS LLC
One of The TILTON Companies

P.O. Box 3627, Nantucket, Massachusetts 02584-3627
Tel. (508) 228-0240 Fax (508) 228-9856
www.nantucketsurveyors.com
nsllcinfo@nantucketsurveyors.com

N-10638

January 31, 2020

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, Massachusetts 02554

Re: Notice of Intent
Applicant: Deborah Killen Lothian and William R.J. Lothian, Trustees of Ten Easy Street Nominee Trust
10 Easy Street, Map: 42.3.1 Parcel: 78
Nantucket, MA 02554

Dear Commission Members,

Enclosed please find the following:

- Two (2) copies of a Notice of Intent for the above-referenced project;
- One (1) Filing Fee to the Town of Nantucket - $25.00 (Bylaw);
- One (1) Filing Fee to the Town of Nantucket - $200.00 (Consultant review fee);
- One (1) Check to the Inquirer & Mirror - $335.10 (publishing of the Public Notice).
- One (1) Check to the Town of Nantucket - $262.50 (WPA Fee)
- One (1) Check to the Commonwealth of MA – $237.50 (WPA Fee) Copy

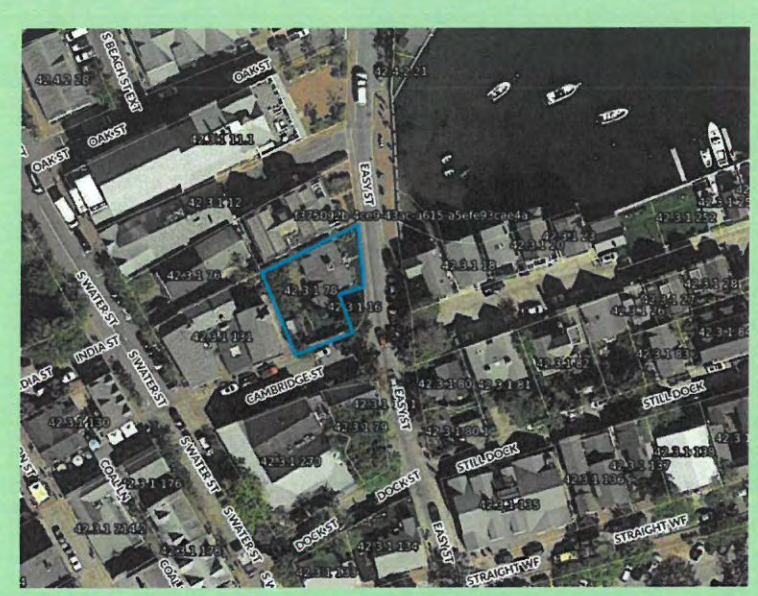
This application is for the proposed installation of two pervious parking spaces with associated site work, grading and landscaping within Land Subject to Coastal Storm Flowage and the buffer zone to a Coastal Bank (bulkhead). The proposed work is shown on the included plan, "Site Plan to Accompany a Notice of Intent #10 Easy Street" prepared by Nantucket Surveyors, LLC, Dated: January 31, 2020.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to call our office.

Respectfully,
Nantucket Surveyors, LLC

Paul J. Santos, PLS

Enclosures
cc: DEP Southeast Regional Office
Deborah Killen Lothian & William R.J. Lothian, Trustees of Ten Easy Street Nominee Trust



Notice of Intent

Map 42.3.1 Parcel 78
10 Easy Street
Nantucket, Massachusetts

Prepared for: **Deborah Killen Lothian and William R.J. Lothian, Trustees**
c/o Ten Easy Street Nominee Trust
P.O. Box 877
Nantucket, MA 02554

Prepared by: **Nantucket Surveyors, LLC**
5 Windy Way, PO Box 3627
Nantucket, MA 02584

January 31, 2020

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

10 Easy Street — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41.284526 — d. Latitude
-70.097497 — e. Longitude

42.3.1 — f. Assessors Map/Plat Number
78 — g. Parcel /Lot Number

2. Applicant:

Deborah Killen Lothian and William R.J. — a. First Name
Lothian, Trustees — b. Last Name
c/o Ten Easy Street Nominee Trust — c. Organization
PO Box 877 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-228-0976 — h. Phone Number
i. Fax Number
office@killenrealestate.com — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Paul J. — a. First Name
Santos — b. Last Name
Nantucket Surveyors LLC — c. Company
PO Box 3627 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02584 — g. Zip Code
508-228-0240 — h. Phone Number
508-228-9856 — i. Fax Number
psantos@nantucketsurveyors.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$500 — a. Total Fee Paid
$237.50 — b. State Fee Paid
$262.50 — c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

A. General Information (continued)

6. General Project Description:

This application is for the proposed installation of two pervious parking spaces with associated site work, grading and landscaping within Land Subject to Coastal Storm Flowage and the buffer zone to a Coastal Bank (bulkhead).

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	19754
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	300 S.F. 1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☐ Yes ☒ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

b. Date of map

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☒ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Site Plan to Accompany a Notice of Intent #10 Easy Street
a. Plan Title

Nantucket Surveyors LLC
b. Prepared By

Paul J. Santos
c. Signed and Stamped by

January 31, 2020
d. Final Revision Date

1"= 10'
e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

1092
2. Municipal Check Number

2/1/20
3. Check date

1093
4. State Check Number

2/1/20
5. Check date

Ten Easy Street LLC
6. Payor name on check: First Name

7. Payor name on check: Last Name

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Deborah Kellner Co Trustee	2-6-20
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A. Applicant Information

1. Location of Project:

10 Easy Street	Nantucket
a. Street Address	b. City/Town
1093	$237.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Deborah Killen Lothian and William R.J.	Lothian, Trustees	
a. First Name	b. Last Name	
c/o Ten Easy Street Nominee Trust		
c. Organization		
PO Box 877		
d. Mailing Address		
Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code
508-228-0976		office@killenrealestate.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name	
c. Organization		
d. Mailing Address		
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2) b.	1	$500	$500

Step 5/Total Project Fee: $500

Step 6/Fee Payments:

Total Project Fee:	$500 a. Total Fee from Step 5
State share of filing Fee:	$237.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$262.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

APPENDIX A PROJECT NARRATIVE

Introduction

This Notice of Intent is submitted to the Nantucket Conservation Commission ("the Commission") and the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Wetlands Protection Act, MGL c.131, s.40, for the proposed installation of two pervious parking spaces with associated site work, grading and landscaping within Land Subject to Coastal Storm Flowage and the buffer zone to a Coastal Bank (bulkhead).

Existing Site Conditions

The subject property is located on the west side of Easy Street, Nantucket Assessors Map: 42.3.1 Parcel: 78. The site is approximately 5,051± S.F., consisting of a 2 story commercial/residential structure and a 1 story commercial structure on a fully developed commercial lot. The surrounding land use is commercial.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for this portion of Nantucket (FIRM Map No. 25019C0086G), dated June 9, 2014 (Appendix D) shows that the area of proposed development is located within Flood Hazard Zone AE (El. 9).

The Massachusetts Natural Heritage Atlas, 14th Edition, dated August 2017 (Appendix C) shows that Priority Habitat and Estimated Habitat is not mapped within the area of proposed development. The proposed work does not require a filing under the Massachusetts Endangered Species Act (MESA).

The Massachusetts Tidelands Jurisdiction Data Map (Appendix E) shows that the area of proposed development is located within historic high water marks inferring the property has been developed on historical filled tidelands. Under this jurisdiction a Chapter 91 License is required for this project.

Erosion Control

Erosion control will be installed along the limit of the work as directed by the project engineer.

Stormwater Management Standards

The post-development peak discharge rate is equal to the pre-development peak discharge rate for this project. Also some of the standards may be waived due to the project being affected by land subject to coastal storm flowage, 310 CMR 10.05(6)(k)(2).

APPENDIX B

Assessor's Map

Figure 1: ASSESSOR'S MAP

10 EASY STREET
NANTUCKET, MASSACHUSETTS
SCALE: N.T.S. DATE: JANUARY 31, 2020

ASSESSOR'S REFERENCE:
MAP: 42.3.1 PARCEL: 78

PREPARED FOR:
DEBORAH K. AND WILLIAM LOTHIAN, TRS
C/O TEN EASY STREET NOMINEE TRUST

PREPARED BY:
NANTUCKET SURVEYORS LLC
5 WINDY WAY NANTUCKET, MA 02554

SOURCE: 2020 NANTUCKET GIS

N–10638

APPENDIX C

Nantucket Topography

Figure 2: TOPOGRAPHIC MAP

10 EASY STREET
NANTUCKET, MASSACHUSETTS
SCALE: N.T.S. DATE: JANUARY 31, 2020

ASSESSOR'S REFERENCE:
MAP: 42.3.1 PARCEL: 78

PREPARED FOR:
DEBORAH K. AND WILLIAM LOTHIAN, TRS
C/O TEN EASY STREET NOMINEE TRUST

PREPARED BY:
NANTUCKET SURVEYORS LLC
5 WINDY WAY NANTUCKET, MA 02554

SOURCE: 2020 NANTUCKET GIS

N-10638

APPENDIX D

NHESP Estimated and Priority Habitat Map

Figure 3: NHESP MAP

10 EASY STREET
NANTUCKET, MASSACHUSETTS
SCALE: N.T.S. DATE: JANUARY 31, 2020

ASSESSOR'S REFERENCE:
MAP: 42.3.1 PARCEL: 78

PREPARED FOR:
DEBORAH K. AND WILLIAM LOTHIAN, TRS
C/O TEN EASY STREET NOMINEE TRUST

PREPARED BY:
NANTUCKET SURVEYORS LLC
5 WINDY WAY NANTUCKET, MA 02554

NHESP PRIORITY HABITATS OF RARE SPECIES

NHESP ESTIMATED HABITATS OF RARE WILDLIFE

SOURCE: 2017 NHESP PRIORITY HABITAT AND ESTIMATED HABITAT

N–10638

APPENDIX E

FEMA Flood Insurance Rate Map

PANEL: 25019C0086G
EFFECTIVE DATE: JUNE 9, 2014

Figure 4: FIRM MAP

10 EASY STREET
NANTUCKET, MASSACHUSETTS
SCALE: N.T.S. DATE: JANUARY 31, 2020

ASSESSOR'S REFERENCE:
MAP: 42.3.1 PARCEL: 78

PREPARED FOR:
DEBORAH K. AND WILLIAM LOTHIAN, TRS
C/O TEN EASY STREET NOMINEE TRUST

PREPARED BY:
NANTUCKET SURVEYORS LLC
5 WINDY WAY NANTUCKET, MA 02554

SOURCE: FEMA MAP SERVICE CENTER

N-10638

APPENDIX F

Tidelands Jurisdiction Map

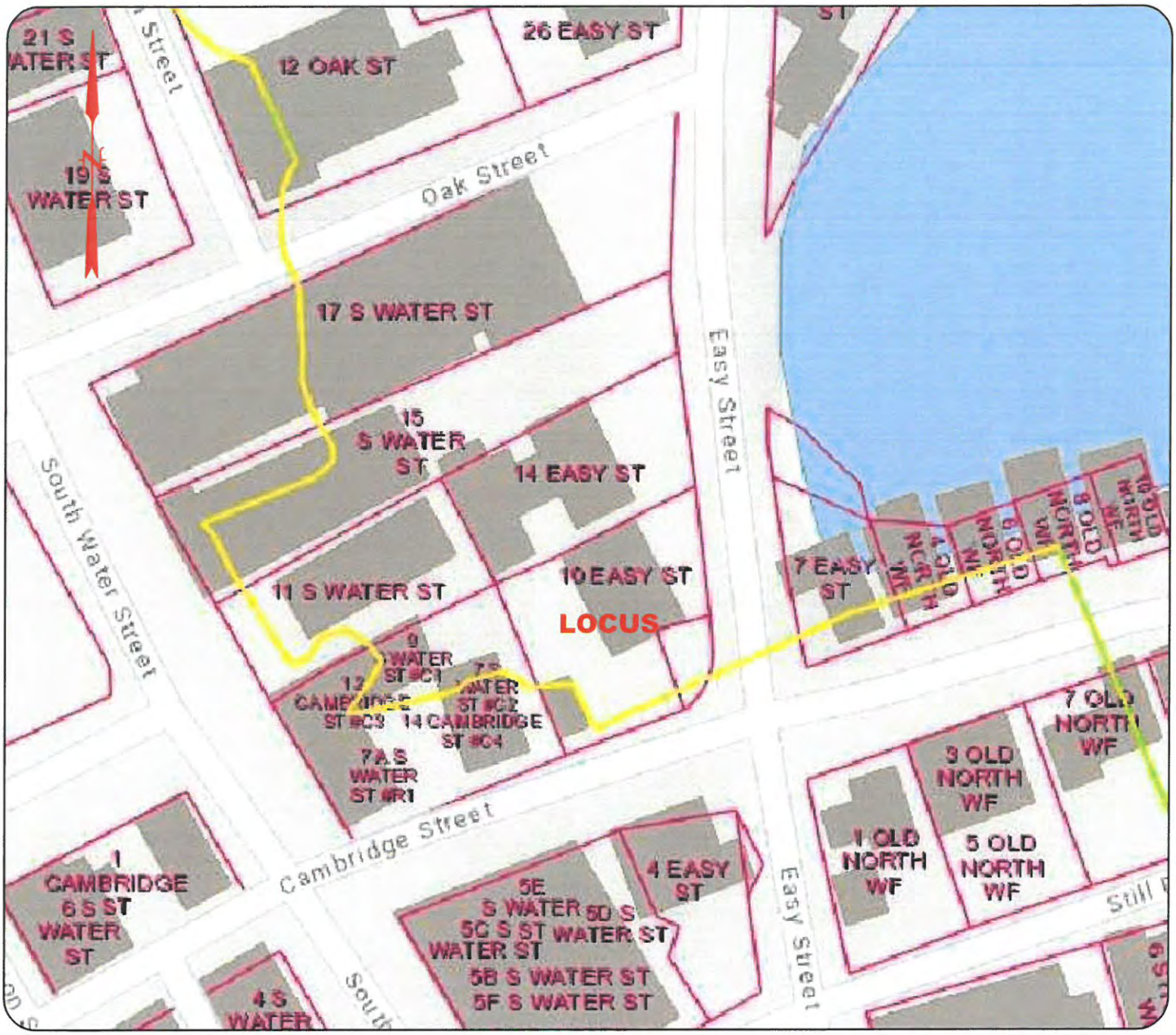


Figure 5: TIDELANDS JURISDICTION MAP

10 EASY STREET
NANTUCKET, MASSACHUSETTS
SCALE: N.T.S. DATE: JANUARY 31, 2020

Tidelands Jurisdiction Chapter 91 Historic High Water

Tidelands Jurisdiction Chapter 91 Inferred Historic High Water

ASSESSOR'S REFERENCE:
MAP: 42.3.1 PARCEL: 78

PREPARED FOR:
DEBORAH K. AND WILLIAM LOTHIAN, TRS
C/O TEN EASY STREET NOMINEE

PREPARED BY:
NANTUCKET SURVEYORS LLC
5 WINDY WAY NANTUCKET, MA 02554

SOURCE: MASSACHUSETTS GIS

N–10638

APPENDIX G

Site Photographs

10 East Street, Nantucket, MA
Applicant: Deborah Killen Lothian and William R.J. Lothian, Trustees

View of proposed location of parking spots from Easy Street

View of the Coastal Bank (bulkhead) from the property

APPENDIX I

Stormwater Management Report

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide

conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

Dale MacKinnon 1/31/2020
Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of

Checklist for Stormwater Report

the project:

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☒ Other (describe): porous paving grids for parking spots

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist (continued)

Standard 2: Peak Rate Attenuation

Checklist for Stormwater Report

☒ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist (continued)

Standard 3: Recharge (continued)

- ☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- ☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

- ☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- ☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
  - ☐ is within the Zone II or Interim Wellhead Protection Area
  - ☐ is near or to other critical areas
  - ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
  - ☐ involves runoff from land uses with higher potential pollutant loads.
- ☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- ☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist (continued)

Standard 4: Water Quality (continued)

- ☐ The BMP is sized (and calculations provided) based on:
  - ☐ The ½" or 1" Water Quality Volume or
  - ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- ☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- ☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- ☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.
- ☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.
- ☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- ☐ All exposure has been eliminated.
- ☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- ☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- ☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- ☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

Checklist for Stormwater Report

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

Checklist for Stormwater Report

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☐ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☐ Name of the stormwater management system owners;
- ☐ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☒ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

STORMWATER MANAGEMENT REPORT

#10 Easy Street Nantucket MA

The purpose of this Stormwater Report is to document compliance of 10 Easy Street with the Massachusetts Stormwater Management Standards. Attached to this document is the Checklist for the Stormwater Report with a certification by Dale Mackinnon, P.E. of Nantucket Surveyors, LLC that the documents have been prepared in accordance with the requirements of the Stormwater Management Standards, and the submitted information in the checklist is accurate. Also included in the report is the explanation of why some information specified in the checklist is not applicable to the Project. It should be noted that the checklist sometimes lists options, and if an item is unchecked, it may be because it was an unselected option, and not an item that required information.

Applicant: Deborah Killen Lothian and William R.J. Lothian, Trustees of Ten Easy Street Nominee Trust

Project Name: Not Applicable

Project Address: Assessor's Map 42.3.1 Parcel 78

The subject property is located on the south side of Easy Street, Nantucket Assessors Map: 42.3.1 Parcel: 78. The site is approximately 5,051 ±.S.F., consisting of a 2 story commercial/residential structure and a 1 story commercial structure on a fully developed commercial lot. The surrounding land use is commercial.

Stormwater Report Prepared by:

Firm: Nantucket Surveyors LLC

Registered Professional Engineer: Dale Mackinnon, P.E.

Project Type:

This project consists of minor redevelopment on a mixed use lot.

Overview:

The project is for the installation of two pervious parking spaces with associated site work, grading, and landscaping within Land Subject to Coastal Storm Flowage and the buffer zone to a Coastal Bank (bulkhead). There is no existing stormwater treatment system on site. The new parking spots will be installed using pervious block pavers, eliminating stormwater runoff and the need for a treatment system.

REVIEW OF STORMWATER MANAGEMENT STANDARDS

Standard #1

No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

There are no new outfalls for this site.

Standard #2

Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

Standard #2 was developed to prevent storm damage and downstream and off-site flooding in fresh water systems where increased runoff from a site can cause increased flooding of adjacent fresh water areas as the volume of runoff water is significant compared to the receiving volume of the floodplain area.

The project design has no change to peak flows leaving the site, proposed flows are the same as the peak flows of the existing site conditions.

Standard #3

Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

There is no increase in peak discharge, therefore no recharge has been provided.

Standard #4

Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

> *a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*

b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and

c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

There is no increase in peak discharge, therefore no recharge or pretreatment has been provided.

Standard #5

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The Site does not have land uses with higher potential pollutant loads.

Standard #6

Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The Site does not discharge stormwater to a Critical Area.

Standard #7

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

This project is considered a Redevelopment project however the project complies with all Stormwater Standards.

Standard #8

A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Erosion and sediment controls have been incorporated into the project design to prevent erosion, control sediments, and stabilize exposed soils during construction or land disturbance

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan has been included herewith.

Standard #9

A Post construction Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A post construction Operation and Maintenance Plan will be submitted to the Conservation Commission if determined to be necessary.

Standard #10

All illicit discharges to the stormwater management system are prohibited. The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including stormwater best management practices and any pipes intended to transport stormwater to the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

An illicit Discharge Compliance Statement will be provided prior to the beginning of construction.

10 EASY STREET NANTUCKET MASSACHUSETTS
CONSTRUCTION PERIOD POLLUTION PREVENTION PLAN

JANURAY 31, 2020

Introduction

The accompanying narrative, reference documents and plans constitute the Construction Period Pollution Prevention Plan (CPPPP, "Plan") associated with site work activities at Killen Real Estate of 10 Easy Street in Nantucket MA. This project entails the installation of two pervious parking spaces within Land Subject to Coastal Storm Flowage and the buffer zone to a Coastal Bank (bulkhead) across Easy Street. This site work is specifically related to work submitted under a Notice of Intent. This Plan has been prepared pursuant to Standard 8 of the Massachusetts Stormwater Management Standards, dated 2008. The Plan covers construction activity associated with the redevelopment.

A copy of the CPPPP must remain on-site during construction. When site work begins, regular inspections of the erosion control measures must be conducted by the Contractor periodically and after heavy rainstorms. Summary reports of inspections shall be added to the CPPPP, and should include the date of inspection, status of erosion control measures, necessary adjustments, and a time frame for adjustments and further inspection. Refer to Erosion and Sediment Control Inspection and Maintenance, herein.

Guidelines of the Construction Period Pollution Prevention Plan are presented in detail below and include the attached site plan. The following will describe the existing site conditions, development, and present methods to protect water resource areas on and adjacent to the site.

Responsibility for Operation and Maintenance:

Owner: Deborah Killen Lothian and William R.J. Lothian, Trustees of Ten Easy Street Nominee Trust
Contact: Deborah Killen Lothian and William R.J. Lothian, office@killenrealestate.com

The owner, its' designated representative (contractor), or successor in Title shall be responsible for the continuous operation and maintenance of the site, or shall enter into an agreement with a qualified maintenance contractor to conduct the work.

If applicable the contractor shall have demonstrated capabilities in sediment removal, cleaning and maintenance of drainage structures, and shall have the equipment to physically remove the accumulated sediments and the ability to repair the structural components of the system.

Existing Site Conditions

The subject property is a developed commercial/residential lot located on the west side of Easy Street, Nantucket Assessors Map: 42.3.1 Parcel: 78. The lot area is 5,051± S.F. The surrounding land uses are residential and commercial.

This site contains a resource areas subject to jurisdiction under the Nantucket Wetland Bylaw and Massachusetts Wetlands Protection Act. The resource is Land Subject to Coastal Storm Flowage. The site is also located within the buffer zone to a Coastal Bank (bulkhead) located to the east across Easy Street.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for this portion of Nantucket (FIRM Map No. 25019C0086G), dated June 9, 2014 (Appendix D) shows that the area of proposed development is located within Flood Hazard Zone AE (Elev. 9).

The Massachusetts Natural Heritage Atlas, 14th Edition, dated August 2017 (Appendix D) shows that Priority Habitat and Estimated Habitat is not mapped within the area of proposed development. The proposed work does not require a filing under the Massachusetts Endangered Species Act (MESA).

The Massachusetts Tidelands Jurisdiction Data Map (Appendix E) shows that the area of proposed development is located within historic high water marks inferring the property has been developed on historically filled tidelands. Under this jurisdiction a Chapter 91 License is required for this project.

Development

This project entails the installation of two pervious public parking spaces within Land Subject to Coastal Storm Flowage and the buffer zone to a Coastal Bank (bulkhead) located across Easy Street.

Sequence of Major Activities

1) Pre construction meeting with design engineer, owner, contractor, and Conservation Commission Agent
2) Install silt fence and catch basin silt sacks as necessary
3) Remove earth in the area of the new parking spots
4) Install porous pavers
5) Conduct regular inspections of erosion control, especially after rain events and maintain or replace as necessary
6) Remove temporary erosion control.

Erosion Control

Erosion controls will be installed along the limit of the work as directed by the project engineer.

Silt sacks shall be installed in all existing catch basins receiving runoff from the site work. The silt sacks shall be maintained according to local and state regulations.

Erosion and Sediment Control Inspection and Maintenance

Inspection and maintenance procedures will be used to maintain erosion and sediment controls during construction.

- All erosion/sedimentation control measures will be inspected at least once (1) each week, or, at least once (1) every 14 days AND within 24 hours of any storm event of half an inch (0.5") or greater.
- All erosion/sedimentation control measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.
- Built up sediment will be removed from silt fence when sediment build up reaches ½ the height of the straw wattles.
- The Contractor will be responsible for inspections, maintenance and repair activities, and completing inspection and maintenance reports.
- A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are attached, and completed reports should be added to this Plan.

Non-Stormwater Discharges

It is expected that the following non-stormwater discharges will occur from the site during the construction period:

- No non-stormwater discharges are expected as a result of this project

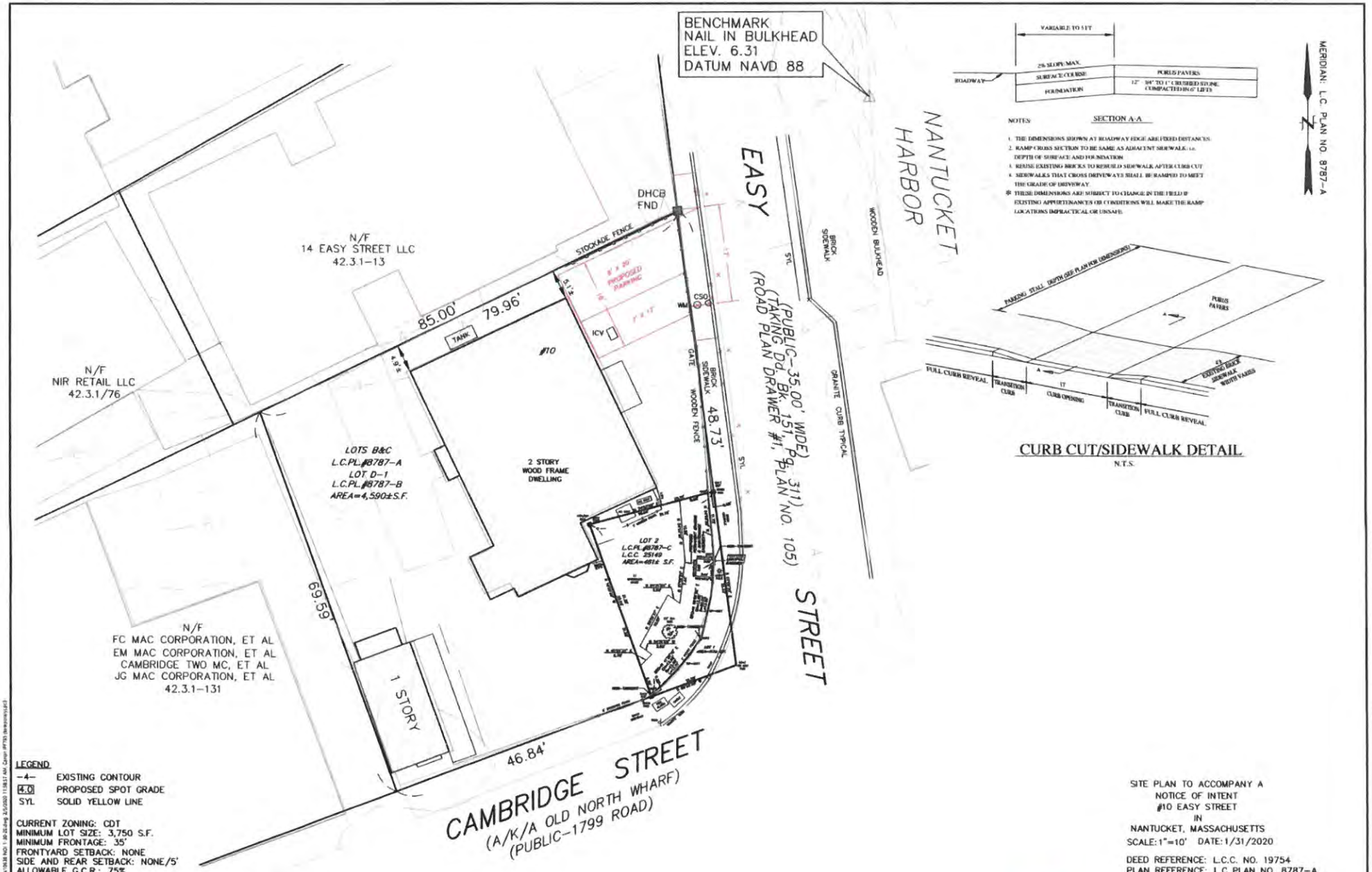
Any unexpected non-stormwater discharges will be directed to sediment controls prior to discharge.

Post-Construction

Temporary erosion and sediment control structures will be removed once construction is complete.

APPENDIX J

"Site Plan to Accompany a Notice of Intent #10 Easy Street"
Prepared by: Nantucket Surveyors
Dated: January 31, 2020



NOTES:

1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK, i.e. DEPTH OF SURFACE AND FOUNDATION.
3. REUSE EXISTING BRICKS TO REBUILD SIDEWALK AFTER CURB CUT.
4. SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF DRIVEWAY.

* THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.

SECTION A-A

CURB CUT/SIDEWALK DETAIL

N.T.S.

LEGEND

-4-	EXISTING CONTOUR
4.0	PROPOSED SPOT GRADE
SYL	SOLID YELLOW LINE

CURRENT ZONING: CDT
MINIMUM LOT SIZE: 3,750 S.F.
MINIMUM FRONTAGE: 35'
FRONTYARD SETBACK: NONE
SIDE AND REAR SETBACK: NONE/5'
ALLOWABLE G.C.R.: 75%

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE PREMISES SHOWN ON THIS PLAN IS LOCATED WITHIN ZONE "AE" (EL. 9) AS DELINEATED ON "FIRM" MAP NO. 25019C0088G; EFFECTIVE DATE: JUNE 9, 2014 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

FOR PROPERTY LINE DETERMINATION THIS PLOT PLAN RELIES ON CURRENT DEEDS AND PLANS OF RECORD, VERIFIED BY FIELD MEASUREMENTS AS SHOWN HEREON. THIS PLAN IS NOT REPRESENTED TO BE A TITLE EXAMINATION OR A RECORDABLE SURVEY.

N.B. 435/20

SITE PLAN TO ACCOMPANY A
NOTICE OF INTENT
#10 EASY STREET
IN
NANTUCKET, MASSACHUSETTS

SCALE: 1"=10' DATE: 1/31/2020

DEED REFERENCE: L.C.C. NO. 19754
PLAN REFERENCE: L.C PLAN NO. 8787-A

ASSESSOR'S REFERENCE:
MAP: 42.3.1 PARCEL: 78

PREPARED FOR:
DEBORAH KILLEN LOTHIAN
& WILLIAM R.J. LOTHIAN, TRUSTEES
OF TEN EASY STREET NOMINEE TRUST

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

COMMONWEALTH OF MASSACHUSETTS
PAUL J. SANTOS
No. 36124
PROFESSIONAL LAND SURVEYOR

1/31/2020

COPYRIGHT BY NANTUCKET SURVEYORS, LLC

N-10638

NOTICE OF INTENT APPLICATION

FOR THE UPGRADE OF A SEPTIC SYSTEM AND LANDSCAPE/HARDSCAPE WITHIN THE BUFFER ZONE, AND A BEACH ACCESS PATH WITHIN A COASTAL DUNE

At

20 WESTERN AVE

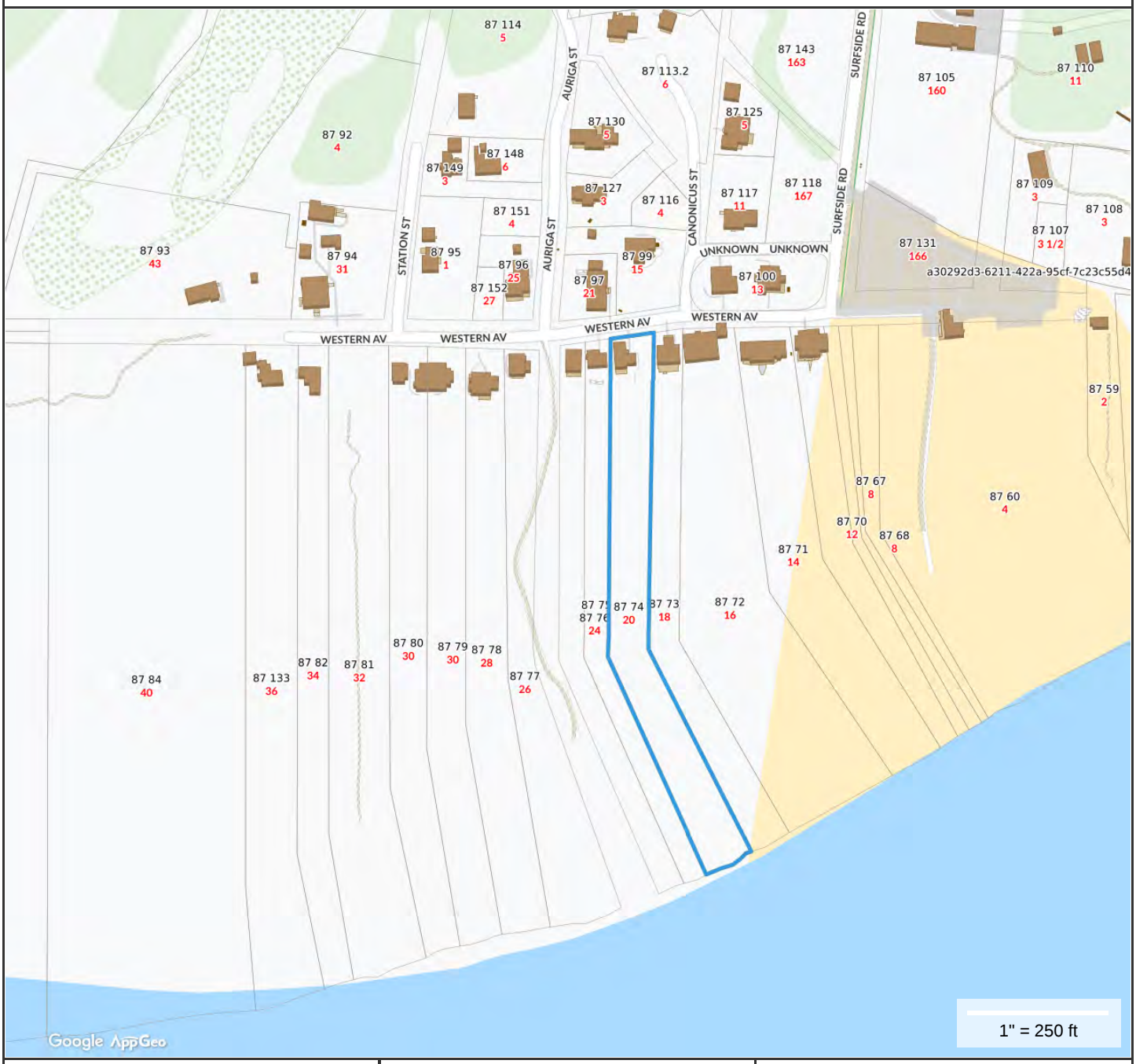
JANUARY 2020

Prepared For

ESCAPEHATCH LLC

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Locus Map



Property Information

Property ID	87 74
Location	20 WESTERN AV
Owner	ESCAPEHATCH LLC

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018

January 31, 2020

Ms. Ashley Erisman, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent
20 Western Ave
Map 87 Parcel 74

Dear Ms. Erisman:

On behalf of the property owner, Escapehatch LLC, Nantucket Engineering & Survey, P.C. is submitting this Notice of Intent (NOI) to the Nantucket Conservation Commission for proposed activities within the buffer zone, and the Coastal Dune resource area at the above referenced property (the "Site") in Nantucket, Massachusetts. The NOI is filed per the provisions of the Massachusetts Wetland Protection Act and implementing Regulations, as well as per the Wetland Protection Regulations for Administering the Town of Nantucket By-law Chapter 136.

Proposed activities at the Site consist of upgrading the existing septic system, installing landscape/hardscaping and creating a beach access path. The septic system includes Innovative/Alternative (IA) Technology. All disturbed areas will be covered with at least six-inches of top soil planted with Cape Cod Special Seed mix or American Beach Grass as appropriate to match surrounding conditions. Attached are permit drawings, including plans showing a site locus, existing conditions including resource area locations, and proposed construction areas.

A completed WPA Form 3 – Notice of Intent is attached along with the NOI Wetland Fee Transmittal Form including checks for $152.50, $177.50, $25 and $200 to cover the WPA filing fee, Nantucket Wetland by-law fee and the Nantucket Expert Review fee. Also included is a check for $335.10 to the Inquirer & Mirror for publication of the notice of the public hearing. A waiver is required from the Town of Nantucket Bylaw Chapter 136 for the proposed project.

Notification of this NOI filing was provided to all property owners within 100-feet by certified mail. This property owner listing was obtained from the Town of Nantucket Assessor's office. Documentation of the notification is provided including a copy of the notification letter, the property owner listing and certified mail receipts.

SITE DESCRIPTION

The subject property is approximately 1-acre in size in the Surfside area of Nantucket Island. The property is bounded to the east and west by existing residential-use properties. The northerly boundary is a Millbrook Road, a paved traveled way. The property contains an existing residential-use structure served by an on-site water well and an on-site septic system. The defined resource areas on-site are Coastal Dune, Coastal Beach and Land Subject to Coastal Storm Flowage. A review of the August 1, 2017 "Massachusetts Natural Heritage Atlas", prepared by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), indicates that the a portion of the project area is within the known range of state listed rare wildlife species.

WORK DESCRIPTION

Prior to commencement of work, a silt fence will be placed at the limit of work as shown on the site plan. This fence will be inspected regularly and kept in good repair until the work has been completed and the site has stabilized.

The existing septic tank will be removed from the site, while the leach pit will be abandoned in accordance with Title 5. A new tank and MicroFast Processor will be installed below existing grade. Two leach trenches will be installed for infiltration of the treated effluent, with a minimum separation distance to estimated seasonal high groundwater of five-feet provided. The advanced treatment and increased separation distance to groundwater compared to the existing system represents a significant net benefit in terms of environmental protection. A new well will also be installed to provide the required separation distance to the septic system. All disturbed areas will be covered with a minimum of 6” of sand and planted with Cape Cod Special Seed Mix or American Beach Grass.

An existing brick patio will be converted to a dry-laid bluestone patio, which will also be expanded. No portion of the patio is proposed closer than 25-feet to the resource area.

A new walking path through the dune will be created to access the beach. The access has historically been over the neighboring property, which is no longer allowed per the attached letter from that owner. The new path will be as narrow as possible, with the route selected so as to disturb as little vegetation as possible. The path will be cut with a string trimmer, and no grading is proposed. This type of path is consistent with those which exist on properties in the surrounding area.

WAIVER REQUEST

A waiver is required and requested from the following sections of the Wetland Protection Regulations for Administering the Town of Nantucket By-law Chapter 136:

Section 2.03.B.5 to allow the septic system within the 100-foot buffer zone to a Coastal Dune.

Waivers from the By-law can be granted for a number of reasons including:

- **Chapter 1.03 F.3.c** *The Commission may grant a waiver from these regulations when the Commission finds that a project will provide a long-term net benefit/improvement to the resource area, provided any adverse effects are minimized by carefully considered conditions. However, no such project may be permitted which could have an adverse effect on rare wildlife species.*

The septic system will be moved outside of the Coastal Dune resource areas, and the separation distance to groundwater increased significantly, and Innovative/Alternative Treatment added. There is no alternative location on the property that would be further away from the resource areas in compliance with required separation distance to drinking water wells.

CONCLUSION

The proposed upgrade of the septic system represents a long-term net benefit to the protected wetland resource area interests. The project with proposed safeguards will not result in an adverse impact on the areas or the interests protected by the Commission including flood control, erosion control, storm damage prevention, prevention of pollution, wildlife, and wetland scenic views.

I plan to attend the Public Hearings for this application to address any questions, comments or concerns that the Commission may have.

Sincerely,

Arthur D. Gasbarro, PE, PLS

Cc: Escapehatch, LLC
MassDEP – SERO
MA NHESP

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
NANTUCKET
City/Town

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

20 Western Ave — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41d 14' 37" N — d. Latitude
70d 05' 48" W — e. Longitude

87 — f. Assessors Map/Plat Number
74 — g. Parcel /Lot Number

2. Applicant:

a. First Name
b. Last Name
Escapehatch LLC
c. Organization
571 105th Ave N, — d. Street Address
Naples — e. City/Town
FL — f. State
34108-1837 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Arthur D. — a. First Name
Gasbarro, PE, PLS — b. Last Name
Nantucket Engineering & Survey, P.C. — c. Company
20 Mary Ann Drive — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-825-5053 — h. Phone Number
i. Fax Number
art@nantucketengineer.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$330 — a. Total Fee Paid
$152.50 — b. State Fee Paid
$177.50 + $25 + $200 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The applicant is proposing to upgrade an existing septic system, add hardscaping and landscaping within the buffer zone to a coastal dune, and to create a walking path through the coastal dune to access the beach. Please refer to the attached Project Narrative and Site Plan for additional information.

7a. Project Type Checklist:

1. ☒ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Limited Project Driveway Crossing
4. ☐ Commercial/Industrial
5. ☐ Dock/Pier
6. ☐ Utilities
7. ☐ Coastal Engineering Structure
8. ☐ Agriculture (e.g., cranberries, forestry)
9. ☐ Transportation
10. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☐ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

NANTUCKET	C.25,273
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet	
	2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☒ Coastal Dunes	980 +/- 1. square feet	2. cubic yards dune nourishment

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW _____ b. square feet of Salt Marsh _____

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☒ Yes ☐ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

8/1/17
b. Date of map

C. Other Applicable Standards and Requirements (cont'd)

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.C, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.d, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

1. c. Submit Supplemental Information for Endangered Species Review*

   1. ☒ Percentage/acreage of property to be altered:

      (a) within wetland Resource Area — 1% +/- / 0.01 ac. (percentage/acreage)

      (b) outside Resource Area — 7% +/- / 0.06 ac. (percentage/acreage)

   2. ☒ Assessor's Map or right-of-way plan of site

   3. ☒ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work ********

      (a) ☒ Project description (including description of impacts outside of wetland resource area & buffer zone)

      (b) ☒ Photographs representative of the site

      (c) ☒ MESA filing fee (fee information available at: http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

      *Projects altering **10 or more acres** of land, also submit:*

      (d) ☐ Vegetation cover type map of site

      (e) ☐ Project plans showing Priority & Estimated Habitat boundaries

   d. OR Check One of the Following

      1. ☐ Project is exempt from MESA review.
         Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

      2. ☐ Separate MESA review ongoing. — a. NHESP Tracking # — b. Date submitted to NHESP

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm, regulatory review tab). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

2. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only

b. ☐ Yes ☒ No If yes, include proof of mailing or hand delivery of NOI to either:

South Shore - Cohasset to Rhode Island, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

3. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. ☐ Yes ☒ No

5. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

a. ☐ Yes ☒ No

6. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

2. ☐ A portion of the site constitutes redevelopment

3. ☐ Proprietary BMPs are included in the Stormwater Management System.

b. ☒ No. Check why the project is exempt:

1. ☒ Single-family house

C. Other Applicable Standards and Requirements (cont'd)

2. ☐ Emergency road repair

3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Site Plan to Accompany a Notice of Intent a. Plan Title	
Blackwell & Associates, Inc. b. Prepared By	Jeffrey Blackwell, PLS c. Signed and Stamped by
1/15/20 d. Final Revision Date	1" = 30' e. Scale
Proposed Well Plan & Upgrade Plan of Subsurface Treatment System f. Additional Plan or Document Title	1/14/20 g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☒ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2094	1/31/20
2. Municipal Check Number	3. Check date
2093	1/31/20
4. State Check Number	5. Check date
Nantucket Engineering & Survey, PC	
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Agent	1/31/20
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	1/31/20
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A. Applicant Information

1. Applicant:

a. First Name | b. Last Name

c. Organization: Escapehatch, LLC

d. Mailing Address: 571 105th Ave N

e. City/Town: Naples | f. State: FL | g. Zip Code: 34108-1837

h. Phone Number | i. Fax Number | j. Email Address

2. Property Owner (if different):

a. First Name | b. Last Name

c. Organization

d. Mailing Address

e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

3. Project Location:

a. Street Address: 20 Western Ave | b. City/Town: Nantucket

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

The fee should be calculated using the following six-step process and worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Work on a Single-family Dwelling Lot	3	$110	$330
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

Total Project Fee:	$330 + $25 + $200 a. Total Fee from Step 5
State share of filing Fee:	$152.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$177.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

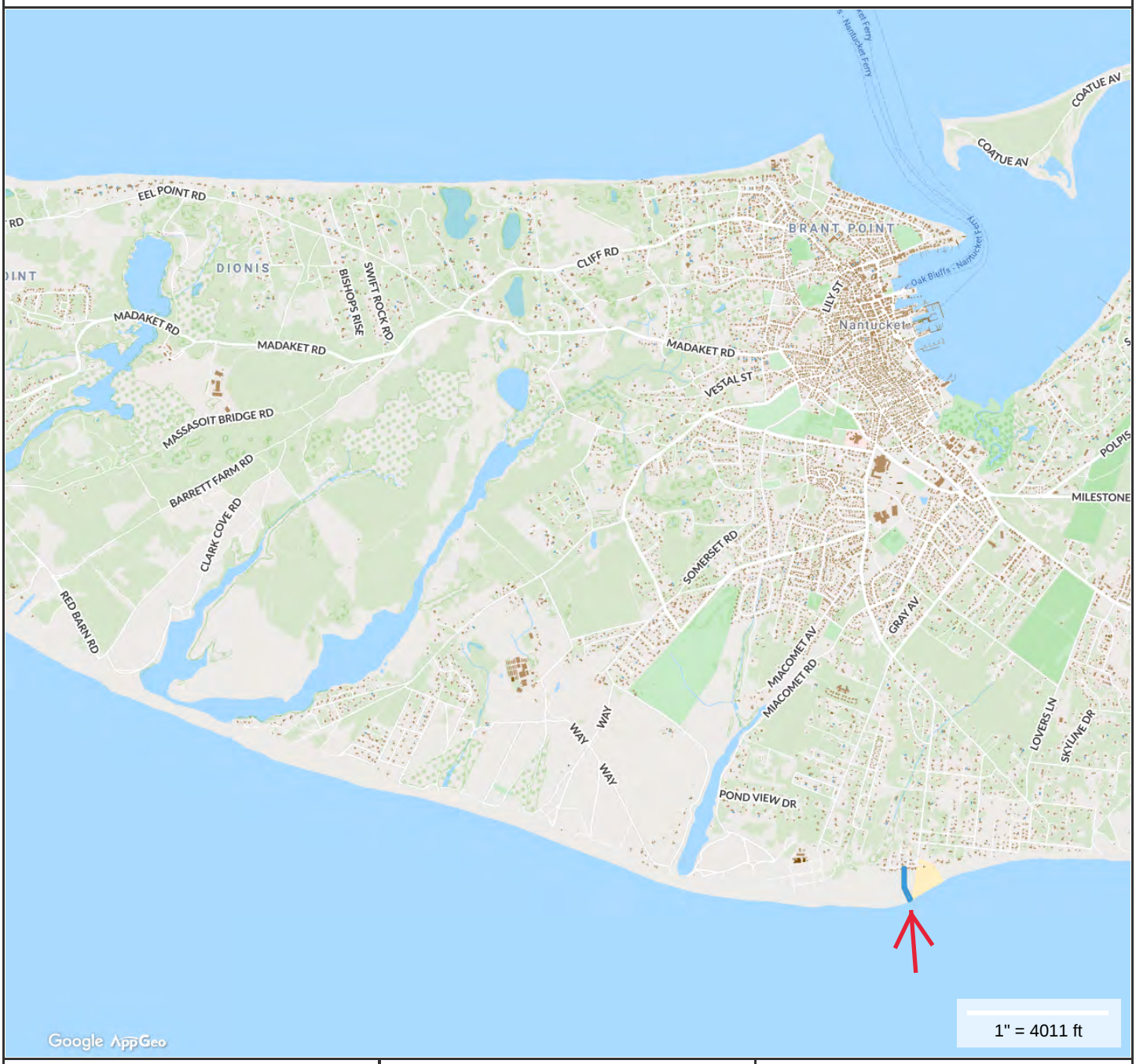
Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

WESTERN AV
WESTERN AV
87 71
87 74
87 73
87 72
87 77
41.243839,-70.097039
Technologies
100 ft
Terms of Use
Report a map error

Locus - Island View



Property Information

Property ID	87 74
Location	20 WESTERN AV
Owner	ESCAPEHATCH LLC

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018

NHESP Certified Vernal Pools

NHESP Potential Vernal Pools

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

Areas of Critical Environmental Concern

Attribution

Massachusetts DCR, Natural Heritage and Endangered Species Program

Eelgrass 1995 - 2013

Water Resource Protection

Water Protection Districts

Emergency Preparedness 3

Hazard Mitigation

Hurricane Inundation

Storm Tide Pathways

Map Themes 6

Topography

Miscellaneous

Utilities

12/20/2018 12:26

12/20/2018 12:26

12/20/2018 12:27

12/20/2018 12:27

CURRENT ZONING CLASSIFICATION:
Residential 20 (R-20)

		EXISTING:
MINIMUM LOT SIZE:	20,000 S.F.	37,108 S.F.±*
MINIMUM FRONTAGE:	75 FT.	SEE PLAN
FRONT YARD SETBACK:	30 FT.	SEE PLAN**
REAR/SIDE SETBACK:	10 FT.	SEE PLAN
GROUND COVER % :	12.5%	2.6% ±

Limited Use General 2 (L.U.G.-2)

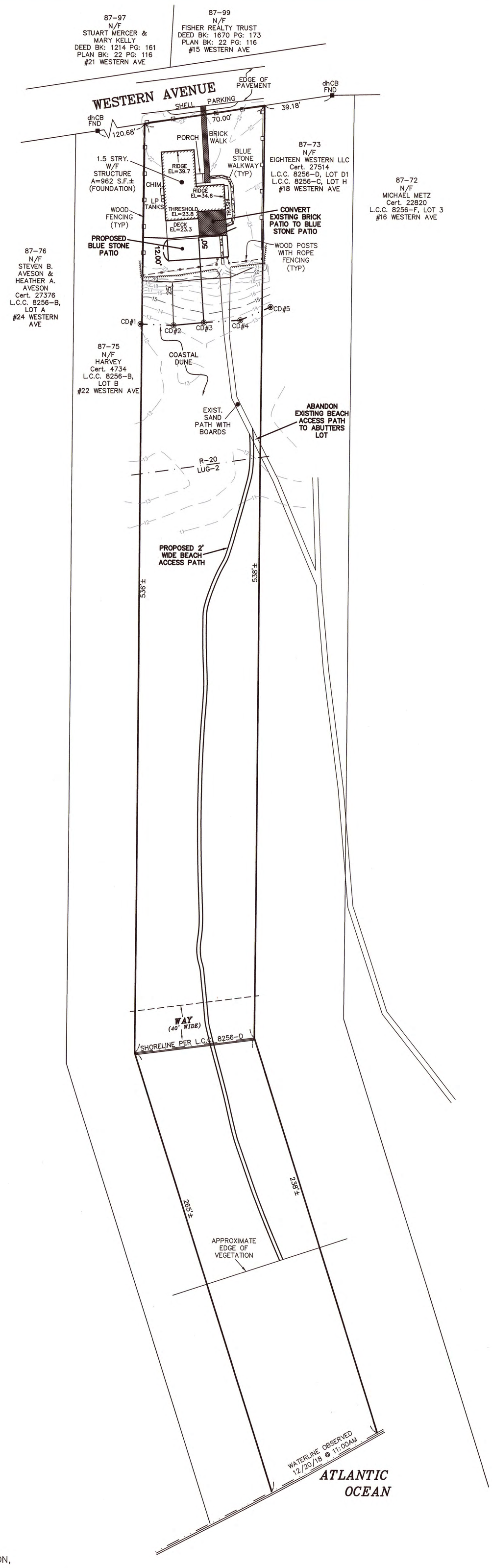
MINIMUM LOT SIZE:	80,000 S.F.
MINIMUM FRONTAGE:	150 FT.
FRONT YARD SETBACK:	35 FT.
REAR/SIDE SETBACK:	15 FT.
GROUND COVER %:	4%

*AREA TO SHORELINE L.C.C. 8256-D

**REF. BOARD OF APPEALS DECISION - DOC. #22202

NOTE: AREA OF LOT WITHIN R-20: 13,992 S.F.±

NOTE: AREA OF LOT WITHIN LUG-2: 23,113 S.F.±



LEGEND

dhCB FND ■	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
CD#1 ◉	DENOTES COASTAL DUNE FLAG FOUND
×21.2	DENOTES EXIST. GRADE SPOT ELEVATION
20 —— —— ——	DENOTES EXIST. GRADE CONTOUR LINE
—o—o—o—	DENOTES EXIST. WOOD FENCE
⌒⌒⌒⌒	DENOTES EXIST. EDGE OF BRUSH

NOTE:
-EXISTING RESOURCE AREA DELINEATION BY STAN HUMPHRIES, ENVIRONMENTAL CONSULTING & RESTORATION, LLC.

NOTE:
-EXISTING GRADES TO BE MAINTAINED.

NOTE: ALL WORK SHOWN W/IN 100' OF THE RESOURCE AREA TO BE APPROVED BY THE NANTUCKET CONSERVATION COMMISSION.

OWNER INFORMATION

ESCAPEHATCH, LLC
CERT. OF TITLE #25273
L.C.C. 8256-D, LOT C-1
ASSESSOR'S MAP 87, PARCEL 74
#20 WESTERN AVENUE

T:\PAJE 1 JOB 50
V:\DRAWFILES\B8605\NOI.dwg 1/15/2020 11:51:19 AM EST

LOT AREA: 37,108 S.F.±
LOT CREATED: NOVEMBER 4, 1944

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

COMMONWEALTH OF MASSACHUSETTS
JEFFREY L. BLACKWELL
No 35388
PROFESSIONAL LAND SURVEYOR

Site Plan of Land
To Accompany a Notice of Intent
in Nantucket, MA
Prepared for
ESCAPEHATCH, LLC

#20 WESTERN AVENUE
ASSESSOR'S MAP 87, PARCEL 74
Scale: 1"= 30' JANUARY 15, 2020

BLACKWELL & ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRCLE
NANTUCKET, MASS. 02554
(508) 228-9026

Sheet 1 of 1

B8605

CURRENT ZONING CLASSIFICATION:
Residential 20 (R–20)

		EXISTING:
MINIMUM LOT SIZE:	20,000 S.F.	37,108 S.F.±*
MINIMUM FRONTAGE:	75 FT.	SEE PLAN
FRONT YARD SETBACK:	30 FT.	SEE PLAN**
REAR/SIDE SETBACK:	10 FT.	SEE PLAN
GROUND COVER % :	12.5%	2.6% ±

Limited Use General 2 (L.U.G.–2)

MINIMUM LOT SIZE:	80,000 S.F.
MINIMUM FRONTAGE:	150 FT.
FRONT YARD SETBACK:	35 FT.
REAR/SIDE SETBACK:	15 FT.
GROUND COVER %:	4%

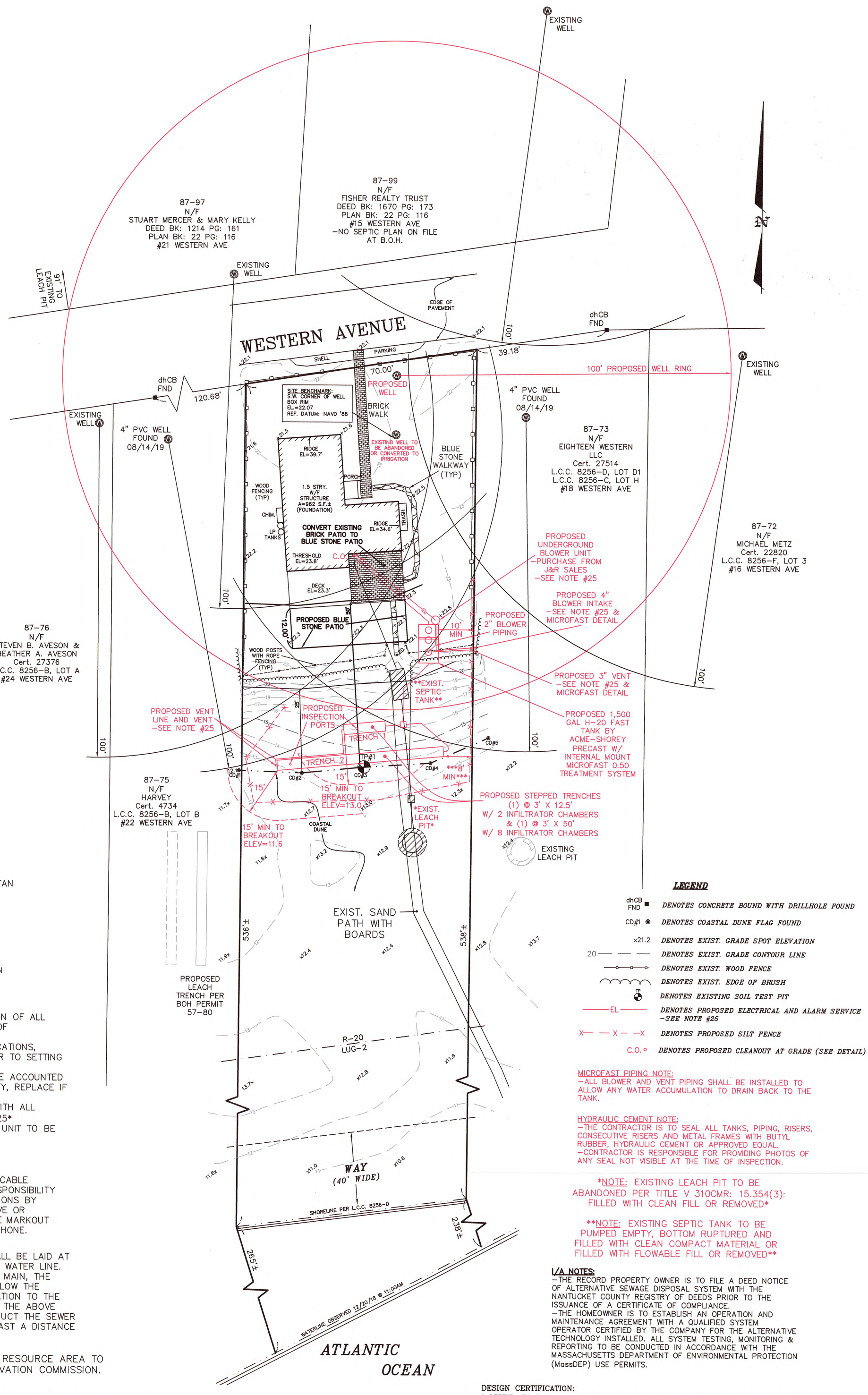
*AREA TO SHORELINE L.C.C. 8256–D

**REF. BOARD OF APPEALS DECISION – DOC. #22202

NOTE: AREA OF LOT WITHIN R–20: 13,992 S.F.±

NOTE: AREA OF LOT WITHIN LUG–2: 23,113 S.F.±

NOTE:
EXISTING UNDERGROUND UTILITY LOCATIONS, INCLUDING WATER, ELECTRICAL AND CABLE ARE UNKNOWN AND NEED TO BE VERIFIED BY DIGSAFE PRIOR TO CONSTRUCTION.



NOTE:
–EXISTING RESOURCE AREA DELINEATION BY STAN HUMPHRIES, ENVIRONMENTAL CONSULTING & RESTORATION, LLC.

NOTE:
–EXISTING GRADES TO BE MAINTAINED.

NOTE:
NO FIELD CHANGES ARE PERMITTED WITHOUT THE WRITTEN CONSENT OF ARTHUR D. GASBARRO, P.E. NANTUCKET ENGINEERING & SURVEY, P.C.

NOTE:
–CONTRACTOR RESPONSIBLE FOR FIELD LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
–CONTRACTOR TO VERIFY WASTE PIPE EXIT LOCATIONS, ELEVATIONS, AND INVERTS AT STRUCTURE PRIOR TO SETTING SEPTIC COMPONENTS.
–CONTRACTOR TO VERIFY ALL WASTE LINES ARE ACCOUNTED FOR AND INSPECTED FOR STRUCTURAL INTEGRITY, REPLACE IF REQUIRED.
–*SYSTEM TO BE INSTALLED IN ACCORDANCE WITH ALL MANUFACTURER'S SPECIFICATIONS. SEE NOTE #25*
–CONTROL PANEL WITH ALARM FOR MICROFAST UNIT TO BE INSTALLED BY LICENSED ELECTRICIAN PER THE MANUFACTURER'S SPECIFICATIONS.

NOTE:
–THE LOCATION OF ELECTRIC, TELEPHONE AND CABLE TELEVISION WIRES ARE UNKNOWN. IT IS THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE THESE LOCATIONS BY MARKOUT PRIOR TO EXCAVATION & TO PRESERVE OR RELOCATE THEM AS MAY BE REQUIRED. DIGSAFE MARKOUT SHALL BE USED FOR ELECTRICAL, CABLE AND PHONE.

NOTE:
–WATER AND SEWER SEPARATION: SEWERS SHALL BE LAID AT A MINIMUM OF 10 FT. HORIZONTALLY FROM THE WATER LINE. WHENEVER SEWERS MUST CROSS UNDER WATER MAIN, THE SEWER SHALL BE LAID AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN. WHEN THE ELEVATION TO THE SEWER CANNOT BE ADJUSTED TO COMPLY WITH THE ABOVE REQUIREMENT, THE CONTRACTOR SHALL CONSTRUCT THE SEWER OF CLASS 150 PRESSURE PVC PIPE FOR AT LEAST A DISTANCE OF 10 FT ON EACH SIDE OF THE WATER MAIN.

NOTE: ALL WORK SHOWN W/IN 100' OF THE RESOURCE AREA TO BE APPROVED BY THE NANTUCKET CONSERVATION COMMISSION.

LOCAL UPGRADE APPROVALS REQUIRED
TITLE 5: 310 CMR: 15.248 (1): OMISSION OF RESERVE AREA. NOT REQUIRED FOR AN UPGRADE.
TITLE 5: 310 CMR 15.405(1)(a): REDUCTION OF SETBACKS TO PROPERTY LINES. 8' PROVIDED.
TITLE 5: 310 CMR 15.405(1)(b): AN INCREASE IN MAXIMUM ALLOWABLE DEPTH OF SYSTEM COMPONENTS REQUIRED BY 310 CMR 15.221(7), FROM 36" TO 72" BELOW FINISH GRADE.

LOCAL BOARD OF HEALTH REGULATION – NO VARIANCE REQUIRED
TON REGULATION: 52.02(A): SEPTIC SYSTEM INSTALLATION WITHIN 100 FOOT WETLAND BUFFER ZONE.
52.02(A.1): ON A LOT IN EXISTENCE PRIOR TO THE EFFECTIVE DATE OF THESE REGULATIONS, WHERE LOT CONFIGURATION AND OR MAXIMUM SQUARE FOOTAGE PROHIBITS LOCATING A SOIL ABSORPTION SYSTEM THE MINIMUM 100 FEET FROM A WETLAND, THE SOIL ABSORPTION SYSTEM SHALL HAVE A MAXIMUM DESIGN FLOW OF 330 GALLONS PER DAY.

LEGEND

dhCB FND ■	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
CD#1 ◉	DENOTES COASTAL DUNE FLAG FOUND
x21.2	DENOTES EXIST. GRADE SPOT ELEVATION
20	DENOTES EXIST. GRADE CONTOUR LINE
	DENOTES EXIST. WOOD FENCE
	DENOTES EXIST. EDGE OF BRUSH
TP	DENOTES EXISTING SOIL TEST PIT
EL	DENOTES PROPOSED ELECTRICAL AND ALARM SERVICE –SEE NOTE #25
X— — X — —X	DENOTES PROPOSED SILT FENCE
C.O. ∘	DENOTES PROPOSED CLEANOUT AT GRADE (SEE DETAIL)

MICROFAST PIPING NOTE:
–ALL BLOWER AND VENT PIPING SHALL BE INSTALLED TO ALLOW ANY WATER ACCUMULATION TO DRAIN BACK TO THE TANK.

HYDRAULIC CEMENT NOTE:
–THE CONTRACTOR IS TO SEAL ALL TANKS, PIPING, RISERS, CONSECUTIVE RISERS AND METAL FRAMES WITH BUTYL RUBBER, HYDRAULIC CEMENT OR APPROVED EQUAL.
–CONTRACTOR IS RESPONSIBLE FOR PROVIDING PHOTOS OF ANY SEAL NOT VISIBLE AT THE TIME OF INSPECTION.

NOTE: EXISTING LEACH PIT TO BE ABANDONED PER TITLE V 310CMR: 15.354(3): FILLED WITH CLEAN FILL OR REMOVED

NOTE: EXISTING SEPTIC TANK TO BE PUMPED EMPTY, BOTTOM RUPTURED AND FILLED WITH CLEAN COMPACT MATERIAL OR FILLED WITH FLOWABLE FILL OR REMOVED

I/A NOTES:
–THE RECORD PROPERTY OWNER IS TO FILE A DEED NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM WITH THE NANTUCKET COUNTY REGISTRY OF DEEDS PRIOR TO THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE.
–THE HOMEOWNER IS TO ESTABLISH AN OPERATION AND MAINTENANCE AGREEMENT WITH A QUALIFIED SYSTEM OPERATOR CERTIFIED BY THE COMPANY FOR THE ALTERNATIVE TECHNOLOGY INSTALLED. ALL SYSTEM TESTING, MONITORING & REPORTING TO BE CONDUCTED IN ACCORDANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MassDEP) USE PERMITS.

DESIGN CERTIFICATION:
I CERTIFY TO THE NANTUCKET BOARD OF HEALTH, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THE ONSITE SEWAGE DISPOSAL SYSTEM SHOWN HEREON CONFORMS TO ALL APPLICABLE SECTIONS OF THE MASSACHUSETTS ENVIRONMENTAL CODE, TITLE 5 (310 CMR 15.000), "STANDARD CONDITIONS FOR ALTERNATIVE SOIL ABSORPTION SYSTEMS WITH GENERAL USE CERTIFICATION AND/OR APPROVED FOR REMEDIAL USE" ISSUED BY MASS DEP ON 3/5/18, "STANDARD CONDITIONS FOR SECONDARY TREATMENT UNITS CERTIFIED FOR GENERAL USE" ISSUED 03/20/15, A "CERTIFICATION FOR GENERAL USE" ISSUED TO INFILTRATOR WATER TECHNOLOGIES, LLC. ON 06/12/15, A "CERTIFICATION FOR GENERAL USE" ISSUED TO BIO–MICROBICS, INC. ON 03/20/15, AND ALL DESIGN GUIDANCE PROVIDED BY THE RESPECTIVE COMPANIES.

SEE SHEET 2 FOR SYSTEM DETAILS

NOTE:
–LOCUS IS WITHIN INTERIM WELLHEAD PROTECTION AREA

NOTE:
SEPTIC SYSTEM AND WELL LOCATIONS SHOWN HEREON ARE BASED UPON RECORD FILES AT THE NANTUCKET HEALTH DEPARTMENT.

OWNER INFORMATION
ESCAPEHATCH, LLC
CERT. OF TITLE #25273
L.C.C. 8256–D, LOT C–1
ASSESSOR'S MAP 87, PARCEL 74
#20 WESTERN AVENUE

LOT AREA: 37,108 S.F.±
LOT CREATED: NOVEMBER 4, 1944
LOT OF RECORD–100' WELL PROTECTION

GRAPHIC SCALE
15 0 8 15 30 60
(IN FEET)
1 inch = 15 ft.

CONTACTS

Dig–Safe	1–888–344–7233
On–Target	1–800–598–0628
Health Department	508–228–7200
National Grid	1–800–322–3223
Public Works	228–7244
Water, Wannacomet	228–0022
Building Dept	325–7587
Conservation Comm	228–7230
Police, EMERGENCY	---911---
Environmental Police	257–6932
State Police	228–0706

Sheet 1 of 2

PROPOSED WELL PLAN & UPGRADE PLAN OF A SUBSURFACE SEWAGE TREATMENT & DISPOSAL SYSTEM WITH INNOVATIVE/ALTERNATIVE TECHNOLOGY

PREPARED FOR
ESCAPEHATCH, LLC
#20 WESTERN AVENUE
NANTUCKET, MA

COMMONWEALTH OF MASSACHUSETTS ARTHUR D. GASBARRO CIVIL No. 45951 PROFESSIONAL ENGINEER

CHECKED BY: ADG/JLB	ASSESSOR MAP: 87 PARCEL: 74	
DESIGNED BY: ADG/CLR	DRAWN BY: CLR	DATE: 01/14/20
SCALE: AS NOTED	JOB NO.: B8605	SHEET: 1 OF 2

BLACKWELL & ASSOCIATES, INC.
20 TEASDALE CIRCLE – NANTUCKET, MA 02554
(508)228–9026 FAX (508)228–5292

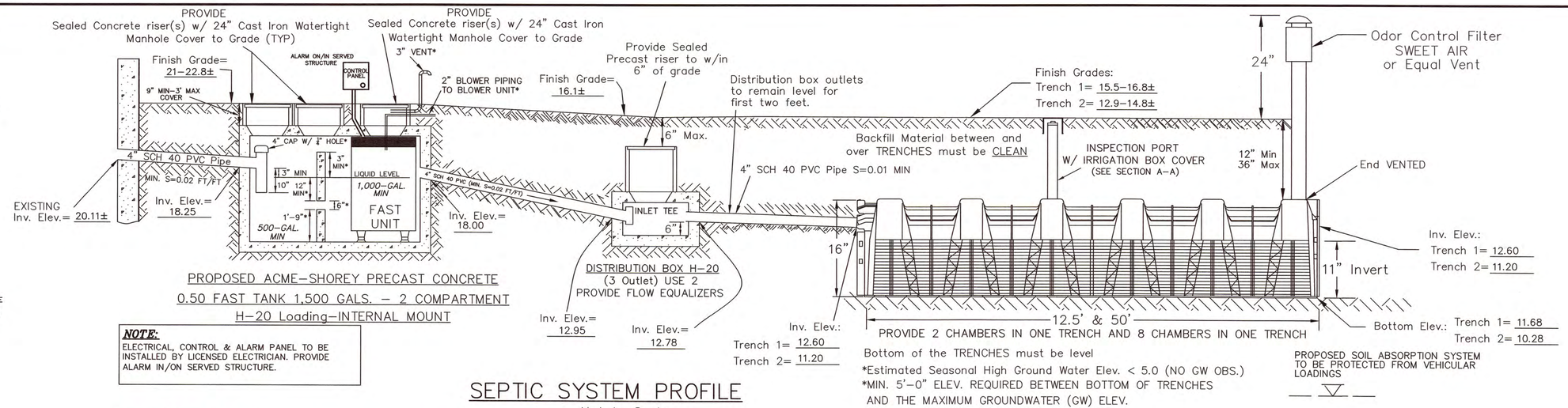
B8605

T:\PAJE 1 JOB 50
V:\DRAWFILES\B8605\NOI.dwg 1/14/2020 2:16:39 PM EST

NOTE:
–CONTRACTOR TO VERIFY WASTE PIPE EXIT LOCATIONS, ELEVATIONS, AND INVERTS AT STRUCTURE PRIOR TO SETTING SEPTIC COMPONENTS.
–CONTRACTOR TO VERIFY ALL WASTE LINES ARE ACCOUNTED FOR AND INSPECTED FOR STRUCTURAL INTEGRITY, REPLACE IF REQUIRED.
–*SYSTEM TO BE INSTALLED IN ACCORDANCE WITH ALL MANUFACTURER'S SPECIFICATIONS. SEE NOTE #25*
–CONTROL PANEL WITH ALARM FOR MICROFAST UNIT TO BE INSTALLED BY LICENSED ELECTRICIAN PER THE MANUFACTURER'S SPECIFICATIONS.

PROPOSED SOIL ABSORPTION SYSTEM TO BE PROTECTED FROM VEHICULAR LOADINGS

NOTE:
–EXISTING GRADES TO BE MAINTAINED.



PROPOSED ACME–SHOREY PRECAST CONCRETE
0.50 FAST TANK 1,500 GALS. – 2 COMPARTMENT
H–20 Loading–INTERNAL MOUNT

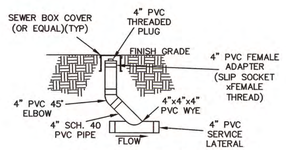
Bottom of the TRENCHES must be level
*Estimated Seasonal High Ground Water Elev. < 5.0 (NO GW OBS.)
*MIN. 5'–0" ELEV. REQUIRED BETWEEN BOTTOM OF TRENCHES AND THE MAXIMUM GROUNDWATER (GW) ELEV.

NOTE:
ELECTRICAL, CONTROL & ALARM PANEL TO BE INSTALLED BY LICENSED ELECTRICIAN. PROVIDE ALARM IN/ON SERVED STRUCTURE.

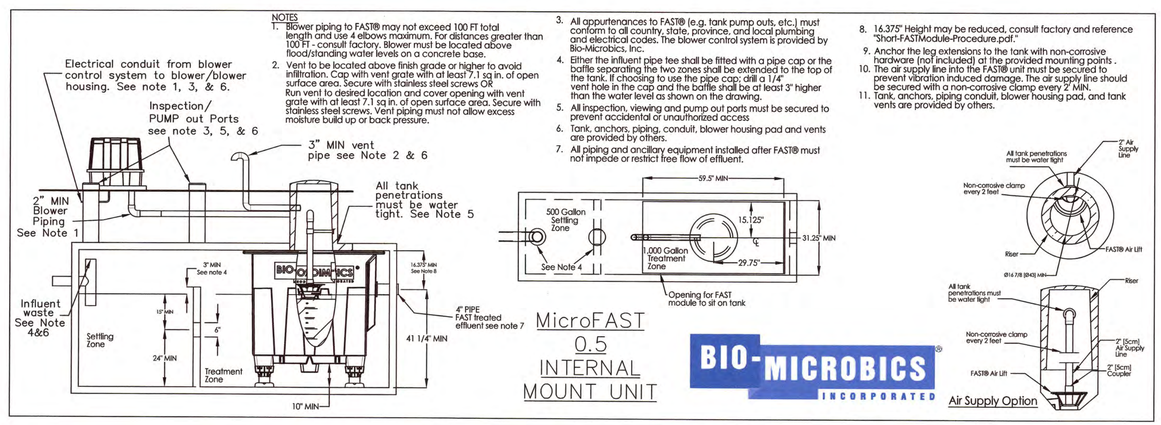
SEPTIC SYSTEM PROFILE
Not to Scale

HYDRAULIC CEMENT NOTE:
–THE CONTRACTOR IS TO SEAL ALL TANKS, PIPING, RISERS, CONSECUTIVE RISERS AND METAL FRAMES WITH BUTYL RUBBER, HYDRAULIC CEMENT OR APPROVED EQUAL.
–CONTRACTOR IS RESPONSIBLE FOR PROVIDING PHOTOS OF ANY SEAL NOT VISIBLE AT THE TIME OF INSPECTION.

MICROFAST PIPING NOTE:
–ALL BLOWER AND VENT PIPING SHALL BE INSTALLED TO ALLOW ANY WATER ACCUMULATION TO DRAIN BACK TO THE TANK.

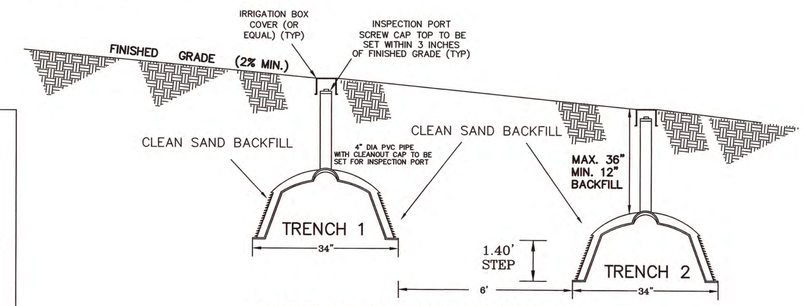


BUILDING SEWER CLEANOUT @ GRADE
Not to Scale



MicroFAST 0.5 INTERNAL MOUNT UNIT

BIO-MICROBICS INCORPORATED



STEPPED LEACH TRENCHES WITH HIGH CAPACITY INFILTRATOR CHAMBERS
SECTION A–A
Not to Scale

GENERAL CONSTRUCTION NOTES

1.) All construction to conform to 310 CMR 15.00, TITLE 5, MassDEP use certifications, and Regulations of the Nantucket Board of Health.
2.) Any deviation or alteration in the construction from the approved plan without the expressed permission of the Design Engineer may invalidate the design and endanger the issuance of a certificate of compliance.
3.) Blackwell & Associates, Inc. shall be contacted three (3) days prior to the start of construction by the Installer. (508) 228–9026
4.) This plan does not warrant or imply any subsurface conditions other than those observed at the immediate testpit locations. In the event impervious or unsuitable material is encountered during construction, said impervious or unsuitable material is to be removed and replaced. See Title 5, 15.255 Construction in Fill.
5.) Delivery piping from the building wall to the Distribution Box shall be SCH40, 4 inch diameter PVC placed at a minimum 2% slope (2% = 0.02 feet per foot or 2' per 100'). All PVC to PVC connections are to be SOLVENT WELDED. Backfill Material in proximity to delivery and/or distribution lines is to be free from tailings, clay or similar materials.
6.) A cleanout is to be provided in proximity to the building wall to enable a Pumper to clear the house to tank line.
7.) Distribution lines are to be PVC Schedule 40 NSF or PVC SDR 35 may be used for systems designed for less than 2000 gpd and where no vehicular traffic is anticipated. PVC end caps are to be provided on Distribution Line ends that do not require venting. All Distribution Lines over fifty (50') feet in length are to be vented.
8.) Any fill required in proximity to delivery piping shall be clean and free of stones larger than 2" dia and be hand tamped to reduce settlement and assure alignment.
9.) The septic tank shall be precast reinforced concrete in compliance w/Title 5, 15.223 & 15.226 with an H–10 loading. A Schedule 40 Tee is to be installed in both the inlet and outlet baffles of the Precast Concrete Septic Tank. A gas baffle is to be installed ON THE OUTLET TEE OR INSTALL OUTLET FILTER.
10.) The tank shall have three 20 inch minimum diameter manholes with readily removable impermeable covers within 6 inches of finish grade.
11.) The base of the Distribution Box shall be set on a compacted, suitable, stable base.
12.) The Distribution Box shall be fitted with an inlet tee (cutoff 1 inch above the outlet invert). Distribution Boxes shall have a minimum 3 Outlets.
13.) The first length (minimum 2 feet) of each outlet pipe from the Distribution Box shall be laid level. All outlet pipes should draw equally, A WATER TEST WILL BE REQUIRED.
14.) If encountered within the effective leaching area of leaching trenches, topsoil, peat or other impervious (or unsuitable) material shall be removed from below and for a distance of 5 feet in all directions around the disposal works footprint, and replaced with clean, suitable material as described in TITLE 5, 310 CMR 15.255:(3) Construction in Fill.
15.) Trench bottoms excavated in natural material must be scarified to offset any machine compaction of the bottom surface.
16.) All fill used in conjunction of the system construction must conform to Title 5, 15.255:(3) Construction in Fill.
17.) All stone used in disposal trench construction must conform to Title 5, 15.247 Aggregate for size and quality.
18.) Any impermeable material used for the construction of an impervious barrier must be impermeable. (Will not pass water, swells upon contact with water, fine sand is not impervious).
19.) Areas disturbed by construction shall loamed, seeded, mulched or otherwise stabilized to minimize erosion. The general system area shall be graded with a minimum 2% grade to provide positive surface drainage. Compliance with any Order of Conditions issued by the local Conservation Commission or DEP shall be considered requirements of this design.
20.) The property lines depicted hereon are GRAPHIC, it is strongly recommended that the actual property lines be field established prior to construction. Conformance to local bylaws shall be determined by the Owner (Client) prior to construction. This disposal works design is not a property line, bank mortgage or title survey.
21.) In the event that evidence or articles of human remains is found during the excavation or construction of this proposed works, all activity onsite is to stop. Immediately contact the State Police (508) 228–0706, Nantucket Police 228–1212 (or 911) and Blackwell & Associates (508) 228–9026.
22.) To prevent the carryover of solids and particulates from the septic tank to soil surfaces in the disposal trenches that are prone to clogging, the septic tank should be inspected periodically to determine the depth of sludge and floatables (grease) accumulation. The tank should be pumped, by a Licensed Pumper, when the sludge volume fills one quarter (1/4) of the tank clear space (or approx. every 2 years).
23.) Blackwell & Associates, Inc. will refuse to issue a positive AS BUILT COMPLIANCE certificate if any portion of the construction is covered prior to adequate inspection by Blackwell & Assoc. and the local Heath Agent. The Disposal Works is not to be covered until it is authorized by Blackwell & Assoc., Inc.
24.) Asbuilt and inspection time has not been included in the billing for this design. Multiple inspections and analysis to correct deviations from the approved design will be billed as add'nl charges. Call (508) 228–9026 when you are ready for your inspection.
25.) Contractor to coordinate the placement of all vents, blower unit, electrical, alarm, and control panels with the architect, homeowner and system manufacturer prior to installation.

DESIGN CRITERIA

1. TYPE OF ESTABLISHMENT: 3 BEDROOMS
2. DESIGN FLOW: 3 BEDROOMS AT 110 GALS./BEDROOM/DAY = 330 GPD
3. SEPTIC TANK SIZE: 2 COMPARTMENT ACME–SHOREY FAST 0.50, INTERNAL MOUNT, TANK H–20
   1ST COMPARTMENT: 500 GAL
   2ND COMPARTMENT: 1,000 GAL
   NO ADDITIONAL CAPACITY HAS BEEN PROVIDED FOR GARBAGE DISPOSAL.
4. PROPOSED MICROFAST MODEL: 0.50 INTERNAL MOUNT
5. DESIGN PERCOLATION RATE: <5 MINUTES/INCH – SOIL CLASS I
   FROM TITLE 5 SECTION 15.242: LTAR–EFFLUENT LOADING RATES: 0.74 GPD/SF
6. SOIL ABSORPTION SYSTEM (SAS): 330 GPD / 0.74 GPD/SF= 446 SF REQ'D
   PROVIDE: (1) @ 3' x 12.5' LEACH TRENCH W/ 2 INFILTRATOR CHAMBERS &
   (1) @ 3' x 50' LEACH TRENCH W/ 8 INFILTRATOR CHAMBERS
   10 CHAMBERS x 48.7 SF/CHAMBER = 487 S.F.
7. LEACHING CAPACITY PROVIDED (BY TITLE 5): 360 GPD= 487 SF x 0.74 GPD/SF
8. MAXIMUM ALLOWABLE LOADING (BY TITLE 5)= 360 GALLONS/DAY
   ACTUAL HYDRAULIC LOADING (DESIGN FLOW)= 330 GALLONS/DAY

SOIL LOGS

DEEP OBS. HOLE #1 EL.= 14.0

DEPTH	HORIZON	TEXTURE	COLOR
0" to 12"	A	MED SAND	10 YR 7/1
12" to 84"	C1	COARSE SAND	2.5 Y 8/1
84" to 108"	C2	COARSE SAND	10 YR 6/3

9'

NO REDOX. FEATURES OBSERVED
NO GW. OBSERVED
NO REFUSAL – CAVING
EST. SEASONAL HIGH GW ELEV. < 5.0 (NO GW OBS)

SOIL EVALUATION BY: JEFFREY BLACKWELL, BLACKWELL & ASSOCIATES, INC.
DATE OF TESTING: 09/11/19 WITNESSED BY: ARTELL CROWLEY, BOH AGENT
PERCOLATION RESULTS: RATE (TEST 1 –"C2") <5 MIN\INCH

I CERTIFY THAT ON DECEMBER 18, 1995, I PASSED THE SOIL EVALUATOR EXAMINATION APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE ABOVE ANALYSIS WAS PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE AND EXPERIENCE DESCRIBED IN 310 CMR 15.017.

SIGNATURE DATE 1-15-2020

I/A NOTES:
–THE RECORD PROPERTY OWNER IS TO FILE A DEED NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM WITH THE NANTUCKET COUNTY REGISTRY OF DEEDS PRIOR TO THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE.
–THE HOMEOWNER IS TO ESTABLISH AN OPERATION AND MAINTENANCE AGREEMENT WITH A QUALIFIED SYSTEM OPERATOR CERTIFIED BY THE COMPANY FOR THE ALTERNATIVE TECHNOLOGY INSTALLED. ALL SYSTEM TESTING, MONITORING & REPORTING TO BE CONDUCTED IN ACCORDANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MassDEP) USE PERMITS.

NOTES:
LOCUS IS WITHIN INTERIM WELLHEAD PROTECTION AREA.

MICROFAST SYSTEM 0.50 IS PROPOSED FOR INSTALLATION AT THE SUBJECT PROPERTY PURSUANT TO A MASSDEP CERTIFICATION FOR GENERAL USE ISSUED MARCH 20, 2015.

NITROGEN LOADING CALCULATIONS:
440 GPD/40,000 SF X 37,108 SF = 408 GPD ALLOWED > 330 GPD PROPOSED

OWNER INFORMATION
ESCAPEHATCH, LLC
CERT. OF TITLE #25273
L.C.C. 8256–D, LOT C–1
ASSESSOR'S MAP 87, PARCEL 74
#20 WESTERN AVENUE

T:\PAJE 1 JOB 50
V:\DRAWFILES\B8605\NOI.dwg 1/14/2020 2:16:39 PM EST

PROPOSED WELL PLAN & UPGRADE PLAN OF A
SUBSURFACE SEWAGE TREATMENT & DISPOSAL SYSTEM
WITH INNOVATIVE/ALTERNATIVE TECHNOLOGY
PREPARED FOR
ESCAPEHATCH, LLC
#20 WESTERN AVENUE
NANTUCKET, MA

COMMONWEALTH OF MASSACHUSETTS ARTHUR D. GASBARRO CIVIL No. 45951 1/15/20

CHECKED BY: ADG/JLB	ASSESSOR MAP: 87 PARCEL: 74	
DESIGNED BY: ADG/CLR	DRAWN BY: CLR	DATE: 01/14/20
SCALE: AS NOTED	JOB NO.: B8605	SHEET: 2 OF 2

BLACKWELL & ASSOCIATES, INC.
20 TEASDALE CIRCLE – NANTUCKET, MA 02554
(508)228–9026 FAX (508)228–5292

B8605

SHEET 2 OF 2

LEC WETLANDS WILDLIFE WATERWAYS

MEMORANDUM

DATE: February 11, 2019

TO: Jim Mullen

CC: Jeff Blackwell

FROM: Stan Humphries, Senior Coastal Geologist

RE: 20 Western Avenue, Nantucket, MA

PROJECT #: MulJ\18-343.01

As requested, LEC Environmental Consultants, Inc.(LEC) has evaluated the existing conditions and provides the following information and data regarding the coastal wetland resource areas located at the above-referenced property.

Wetland Boundary Determination Methodology

On November 12, 2018, LEC conducted a site evaluation to identify and characterize existing protectable Wetland Resource Areas in accordance with the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations*. Geology and soils mapping were reviewed prior to the fieldwork being performed. Although difficult to clearly see on the geology quadrangle map, the developed portion of the property appears to be located on the boundary line between dune deposits, undifferentiated (Qd) and Younger Nantucket outwash or glacial deposits (Qno1). The soils are mapped as Udipsamments, rolling for the entire property and for another 25 feet north of Western Avenue. Initial site observations included windblown sand at the surface and flat topography on both sides of the roadway where the most of the properties are developed with single-family dwellings. Elevations decrease seaward of the developed portion of the property and there is clearly a broad area of Coastal Dune that extends south towards the Atlantic Ocean.

Several shallow auger holes were dug along the west side of the property to sample the sediments beneath the lawn and more seaward where it slopes down to the dune area and within the dune. The more seaward locations were dominated by salt-spray rose (*Rugosa rose*) and were upgradient of rolling topography, dominated by American beach grass (*Ammophila brevigulata*) and bearberry (*Arctostaphylos uva-ursi*). In general, each location was characterized by dune material overlying glacial material below. The landward edge of the Coastal dune was determined to be located where there is a 1.5 to 2.0-foot veneer of well-sorted, windblown, fine sand that is tan in color. This layer is underlain glacial material characterized by poorly sorted, coarse sand, with some angular gravel that is more orange in color. The landward boundary of the dune was delineated with six blaze orange LEC flags (labelled CD-1 through

CD-5). The elevations, slopes, and veneer thickness were generally consistent from one point to the next. The geology map is clearly more accurate than the soils map based on field data.

Based on these methods, the boundary of the Coastal Dune existing on-site was demarcated with sequentially numbered blaze orange stick-in flags with the word "LEC" embossed in bold, black print. Wetland flag numbers 1-5 are depicted on the *Site Plan of Land*, dated January 22, 2019, as survey-located by Blackwell & Associates, Inc.

Wetland Resource Area Descriptions

Wetland Resource Areas located on-site include Coastal Beach, Land Subject to Coastal Storm Flowage and Coastal Dune as described below.

1. Coastal Beach

> According to 310 CMR 10.27(2), *Coastal Beach means unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean.*

A Coastal Beach separates the Atlantic Ocean from the site and all structures on the site are located greater than 535 feet north of this Resource Area. The landward boundary of the Coastal Beach is located at the toe of the Primary Frontal Dune and was not flagged in the field.

2. Land Subject to Coastal Storm Flowage (LSCSF)

> *According to 310 CMR 10.04, Land Subject to Coastal Storm Flowage means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.*

According to the June 9, 2014, Federal Emergency Management Agency Flood Insurance Rate Map for the Town of Nantucket (25019C0151G), an area south of the existing dwelling is mapped within Zone VE (el. 10), Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

As a result, LSCSF is confined to an area along the beach and Primary Frontal Dune which is approximately 250 feet south of all structures on the site.

3. Coastal Dune

> According to 310 CMR 10.28(2), *Coastal Dune means any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Coastal dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control.*
>
> According to Section 1.02 of the Bylaw Regulations, there are two definitions for this Resource Area:
>
> > *Coastal Dune - any hill, mound, ridge, or field of ridges, hills, or mounds, composed of sediment, any portion or component of which over the course of a year touches upon,*

exchanges sediment with, and is landward of a coastal beach deposited by wind action, storm overwash, and/or is man-made.

Coastal Dune Field – an assemblage or grouping of coastal dunes, at least a portion of which over the course of a year touches upon, exchanges sediment with, and is landward of a coastal beach, that may or may not be oriented parallel to the shoreline or in response to a dominant wind direction but has been deposited by wind action, wave action, and/or by storm overwash.

The undeveloped portion of the property located south of the existing structures meets the state and local definitions for this Resource Area. The landward boundary was previously described in the first section of the report. This Coastal Dune has unique history as a depositional feature and is unique for Nantucket which is predominantly eroding along its shoreline. According to the MCZM shoreline change data, the beach on this property was located within 80-90 feet seaward of the recently flagged dune boundary over 120 years ago, in the late 1800's. Since that time, the shoreline has been accreting at a rate of 3.5 feet per year.

As a result of the historical development and existing conditions of this depositional feature, the function and value of the Coastal Dune differs from one end to the other. The Primary Frontal Dune is, per se, significant to the protection of the following interests: flood control, erosion control, storm damage prevention, prevention of pollution, wildlife, and wetland scenic views. However, the dune closest to the developed portion of the lot is not necessarily significant to all of these interests. Contrary to that stated in Section 2.03 A of the Bylaw Regulations, the Coastal Dunes, including Coastal Dune Fields, closest to Western Avenue do not aid in storm damage prevention, erosion and flood control; they do not protect land in coastal areas from storm damage and flooding; and they do not serve as a sediment source for beach and intertidal area.

Summary

In accordance with the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations,* LEC identified and characterized three coastal wetland resource areas located at 20 Western Avenue based on a site evaluation and research on soils, surficial geology, floodplains and historical shoreline changes. These resource areas include Coastal Beach, Land Subject to Coastal Storm Flowage and Coastal Dune. The landward boundary of the Coastal Dune was the only feature that was demarcated in the field and survey-located by Blackwell & Associates, Inc.

18 Western LLC

Steven A. Ropitzky, Member

28 Durham Rd.

Stillwater, NY 12170

10-30-19

RE: Boardwalk, 18 Western Ave. Nantucket

Dear Jim,

I relayed your request to the other members of 18 Western Avenue LLC to obtain an easement for the continued use of our boardwalk. We are writing to inform you that after consulting our attorney, we have decided to not grant you an easement or continued use of our boardwalk at 18 Western Avenue.

You have always been a good neighbor but unfortunately we cannot accommodate your request.

Respectfully,

Steven A Ropitzky, Member

18 Western Avenue LLC

18 Western Avenue, Nantucket, Ma. 02544

Notice of Intent Application

15 – 27 High Brush Path
Map 56, Parcels 374, 375, 376, 377, 378 and 379
Map 66, Parcel 303
Nantucket, MA

January 31, 2020

Main Office:
49 Herring Pond Rd.
Buzzards Bay, MA 02532
Ph. 508-833-0070
Fax 508-833-2282

Nantucket Office:
19 Old South Rd.
Nantucket, MA 02554
www.brackeneng.com
Ph. 508-325-0044

List of Materials and Plans - Notice of Intent

1. Notice of Intent – Form 3
2. Maps
   - USGS Topographic Map
   - Aerial Orthophoto
   - Nantucket Parcel Map
   - FEMA Flood Insurance Map #25019C00088G, effective date June 9, 2014
   - Natural Heritage & Endangered Species Map (14th edition 8/1/17)
3. Abutter Documents
   - Affidavit of Service
   - Certified Abutters List
   - Notification to Abutters
   - Proof of Abutter Mailing (Certified Receipts)
4. Plan: *Sewer Extension Design Plan in Nantucket, MA*, dated October 17, 2019 prepared by Bracken Engineering, Inc.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 &
The Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

High Brush Path – Roadway (#15 - #27) — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41.269760 — d. Latitude
-70.117760 — e. Longitude

Map 56 — f. Assessors Map
374, 375, 376, 377, 378 and 379 — g. Parcel /Lot Number
Map 66 — h. Assessors Map
303 — i. Parcel /Lot Number

2. Applicant:

Kevin — a. First Name
Martin — b. Last Name
c. Organization
P.O. Box 2282 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02584 — g. Zip Code
508-221-1420 — h. Phone Number
i. Fax Number
kevinmartin4181@hotmail.com — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Charles — a. First Name
Gibson — b. Last Name
Austin Farm Homeowners Association Trust — c. Organization
P.O. Box 2208 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
h. Phone Number
i. Fax Number
pd105@comcast.net — j. Email address

4. Representative (if any):

Donald F. — a. First Name
Bracken, Jr., PE — b. Last Name
Bracken Engineering, Inc. — c. Company
19 Old South Road — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-325-0044 — h. Phone Number
508-833-2282 — i. Fax Number
don@brackeneng.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$500.00 — a. Total Fee Paid
$237.50 — b. State Fee Paid
$262.50 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

Install new low pressure sewer line within 100' of a bordering, vegetated wetland to serve 7 homes. All work to be performed within existing disturbed areas.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☒ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Nantucket	
a. County	b. Certificate # (if registered land)
468	288
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☒ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW _____ b. square feet of Salt Marsh _____

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   August 1, 2017
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Boulevard
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Sewer Extension Design Plan
a. Plan Title

Bracken Engineering, Inc.
b. Prepared By

Donald F. Bracken, Jr., PE
c. Signed and Stamped by

October 17, 2019
d. Final Revision Date

1" = 30'
e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

14880
2. Municipal Check Number

1/28/2020
3. Check date

14881
4. State Check Number

1/28/2020
5. Check date

Bracken Engineering, Inc.
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 &
The Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant — 2. Date: 1/28/2020

3. Signature of Property Owner (if different) — 4. Date

5. Signature of Representative (if any) – **BRACKEN ENGINEERING, INC.** — 6. Date: 1/28/2020

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

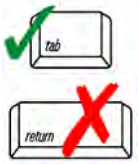
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

High Brush Path (Roadway)	Nantucket
a. Street Address	b. City/Town
14881	$237.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Kevin	Martin
a. First Name	b. Last Name

c. Organization

P.O. Box 2282
d. Mailing Address

Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code

508-221-1420		kevinmartin4181@hotmail.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

Charles	Gibson
a. First Name	b. Last Name

Austin Farm Homeowners Association Trust
c. Organization

P.O. Box 2208
d. Mailing Address

Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code

		pd105@comcast.net
h. Phone Number	i. Fax Number	j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2j (other)	1	$500.00	$500.00

Step 5/Total Project Fee: $500.00

Step 6/Fee Payments:

Total Project Fee:	$500.00 a. Total Fee from Step 5
State share of filing Fee:	$237.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$262.50 c. 1/2 Total Fee **plus** $12.50

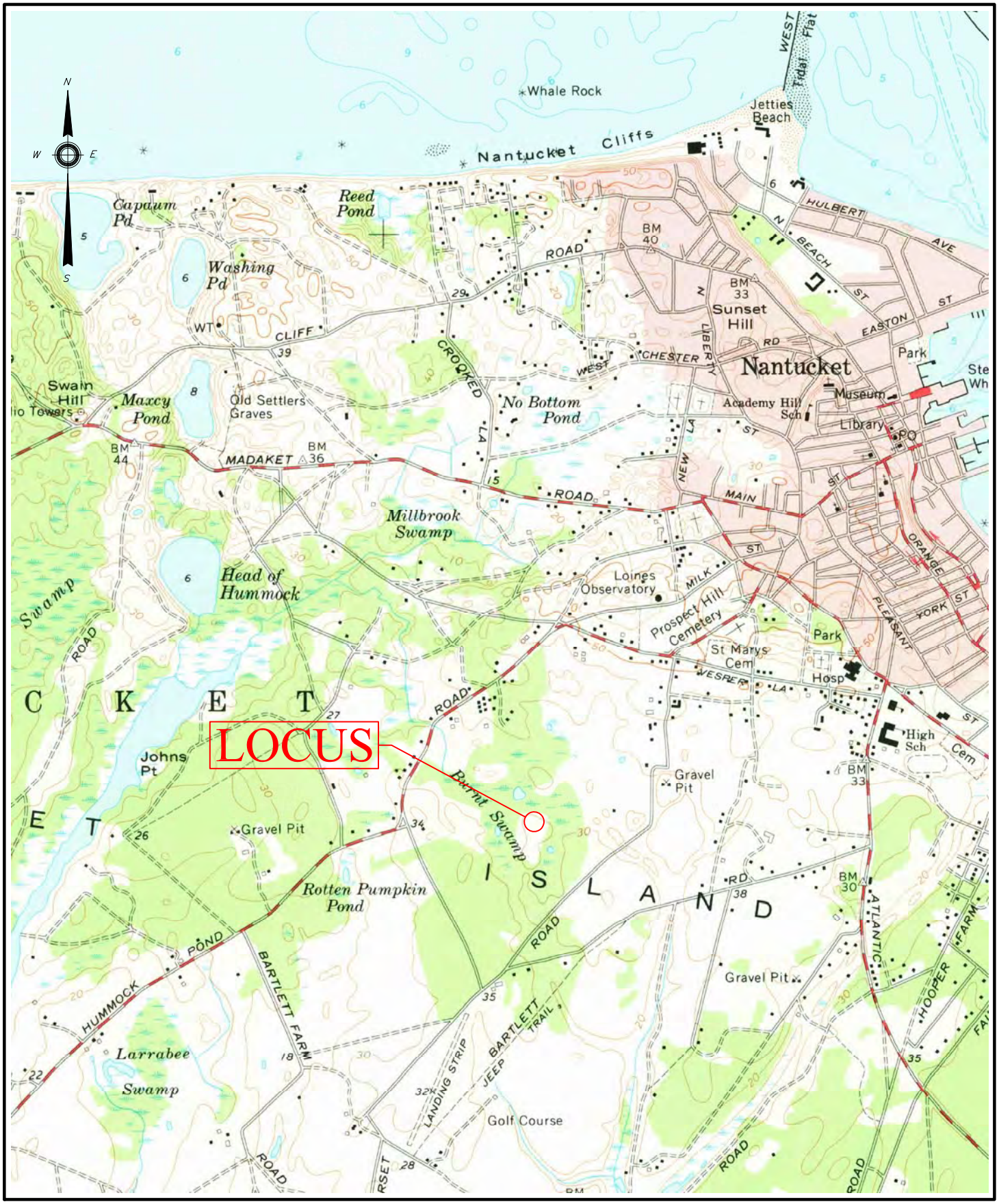
C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)



BRACKEN ENGINEERING, INC.

19 OLD SOUTH ROAD
NANTUCKET, MA 02554

(tel) 508.325.0044
(fax) 508.833.2282
www.brackeneng.com

USGS MAP

High Brush Path
Nantucket, MA

High Brush Path (Roadway) - GIS Aerial Orthophoto

Property Information

Property ID	56 374
Location	15 HIGH BRUSH PA
Owner	MARTIN KEVIN G & NOLL BRENDA

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018

High Brush Path (Roadway) - GIS Parcel

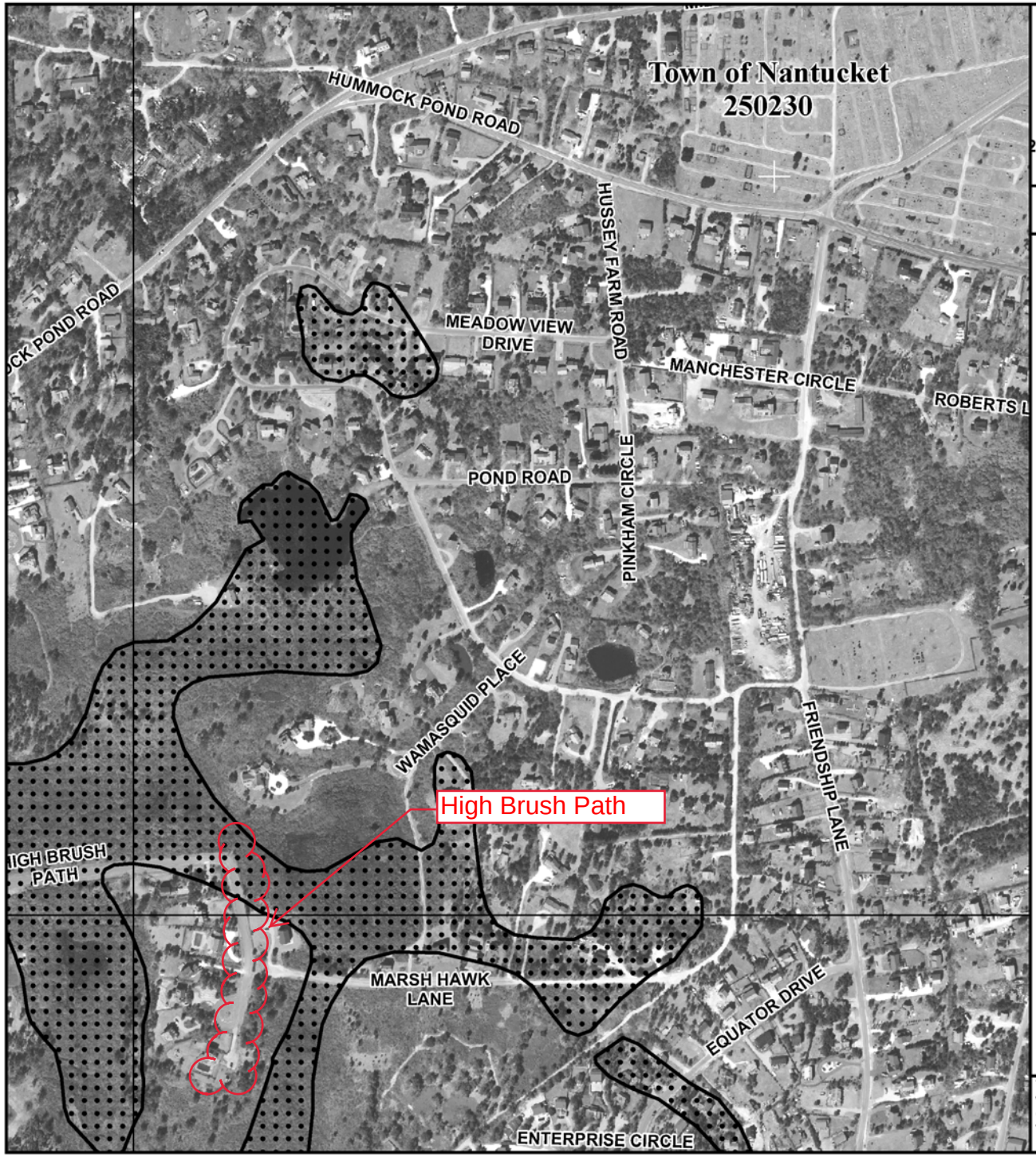
Property Information

Property ID	56 374
Location	15 HIGH BRUSH PA
Owner	MARTIN KEVIN G & NOLL BRENDA

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018



MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0088G

FIRM

FLOOD INSURANCE RATE MAP

NANTUCKET COUNTY, MASSACHUSETTS
(ALL JURISDICTIONS)

PANEL 88 OF 177

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NANTUCKET, TOWN OF	250230	0088	G

-NOTE-
THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT OF 1982 AND/OR SUBSEQUENT ENABLING LEGISLATION.

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

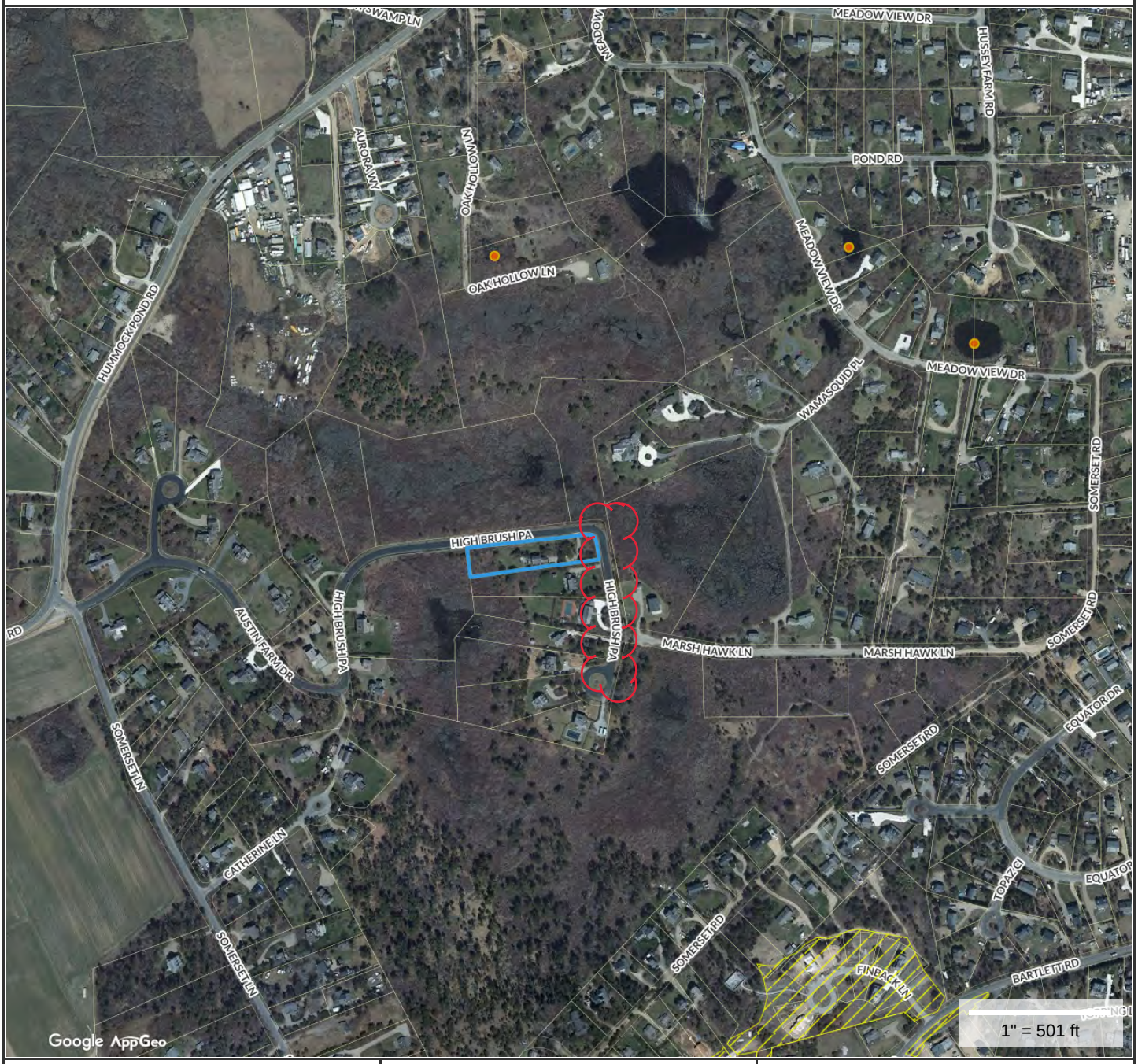
MAP NUMBER
25019C0088G

EFFECTIVE DATE
JUNE 9, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

High Brush Path (Roadway) - GIS NHESP



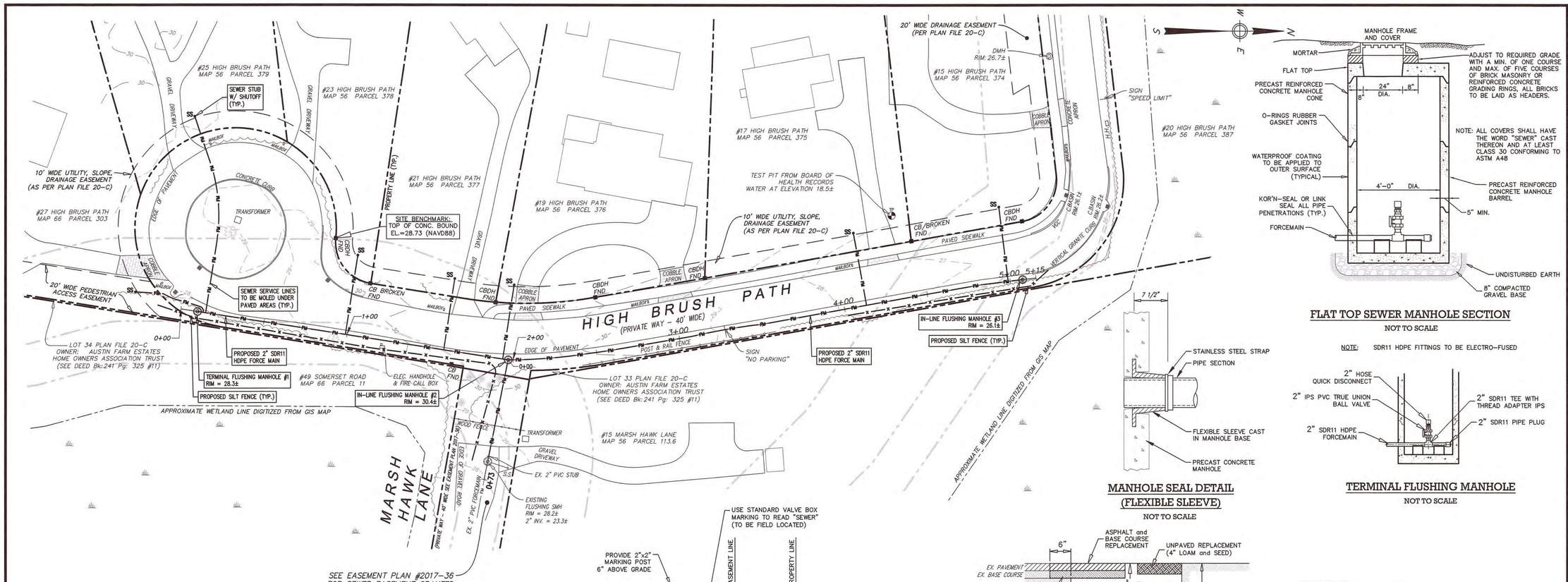
Property Information

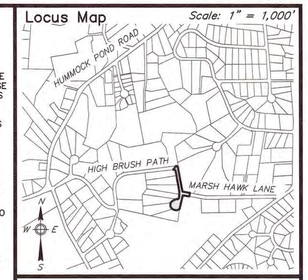
Property ID	56 374
Location	15 HIGH BRUSH PA
Owner	MARTIN KEVIN G & NOLL BRENDA

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/13/2018
Data updated 11/19/2018





FLAT TOP SEWER MANHOLE SECTION

NOT TO SCALE

NOTE: SDR11 HDPE FITTINGS TO BE ELECTRO-FUSED

MANHOLE SEAL DETAIL (FLEXIBLE SLEEVE)

NOT TO SCALE

TERMINAL FLUSHING MANHOLE

NOT TO SCALE

General Notes

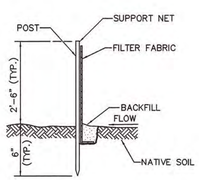
1. ALL CONSTRUCTION TO COMPLY WITH CHAPTER 200, BOARD OF PUBLIC WORKS/SEWER COMMISSIONERS, ARTICLE I.
2. CONTRACTOR TO DETERMINE OR VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION (TELEPHONE, ELECTRIC, GAS, CABLE TV, WATER, ETC.).
3. 4" THICKNESS TOPSOIL AND SEED LANDSCAPED AREAS DISTURBED BY CONSTRUCTION. RESTORE EXISTING ROADS TO EXISTING CONDITIONS.
4. FORCE MAIN PIPING TO BE 2" SDR11 HDPE PRESSURE PIPE. CONCRETE THRUST BLOCKS TO BE PLACED AT ALL BENDS AND FITTINGS. MAINTAIN 4.0' OF COVER OVER FORCE MAIN.
5. PRIOR TO PLACEMENT IN SERVICE, THE FORCE MAIN SHALL BE FLUSHED CLEAN OF ANY CONSTRUCTION DEBRIS. THE FORCE MAIN MUST BE PRESSURE TESTED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF AWWA STANDARDS AND STANDARDS SET BY CHAPTER 200, SECTION 11.08. THE TEST SHALL BE OBSERVED BY THE OWNERS REPRESENTATIVE.
6. ADDITIONAL UNDERGROUND UTILITIES NOT SHOWN ON THIS PLAN MAY EXIST AND THIS FIRM GIVES NO WARRANTY TO THEIR LOCATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY DIG-SAFE PRIOR TO THE COMMENCEMENT OF ANY WORK ON THE SITE.
7. ALL WORK TO BE INSPECTED PRIOR TO BACKFILL IN ACCORDANCE WITH REGULATIONS REFERENCED IN NOTE #1.
8. OWNER: AUSTIN FARM ESTATE HOME OWNERS ASSOCIATION TRUST
9. DEED REF: Bk: 468 Pg: 288

LEGEND

	EXISTING UTILITY BOX
S.S.	EXISTING SEWER SERVICE
FM	EXISTING SEWER FORCEMAIN
100	EXISTING MAJOR CONTOUR
99	EXISTING MINOR CONTOUR
FM	PROPOSED LPSS SEWER MAIN
S.S.	PROPOSED SEWER SERVICE
	PROPOSED SEWER MANHOLE
x x	PROPOSED SILT FENCE

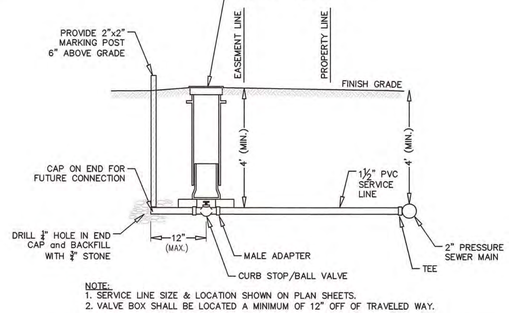
** NO SUBSTITUTES UNLESS APPROVED BY ENGINEER **

** AS-BUILT BY ENGINEER REQUIRED PRIOR TO BACKFILLING **



SILTATION FENCE DETAIL

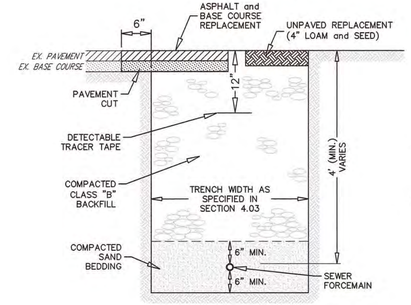
NOT TO SCALE



NOTE:
1. SERVICE LINE SIZE & LOCATION SHOWN ON PLAN SHEETS.
2. VALVE BOX SHALL BE LOCATED A MINIMUM OF 12" OFF OF TRAVELED WAY.

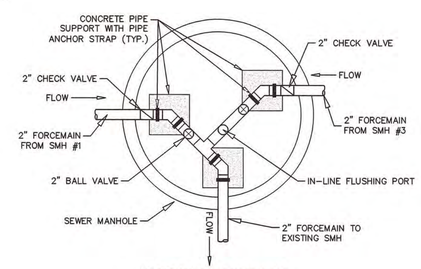
TYPICAL SERVICE CONNECTION TO PRESSURE MAIN DETAIL

NOT TO SCALE



PRESSURE SEWER TRENCH DETAIL

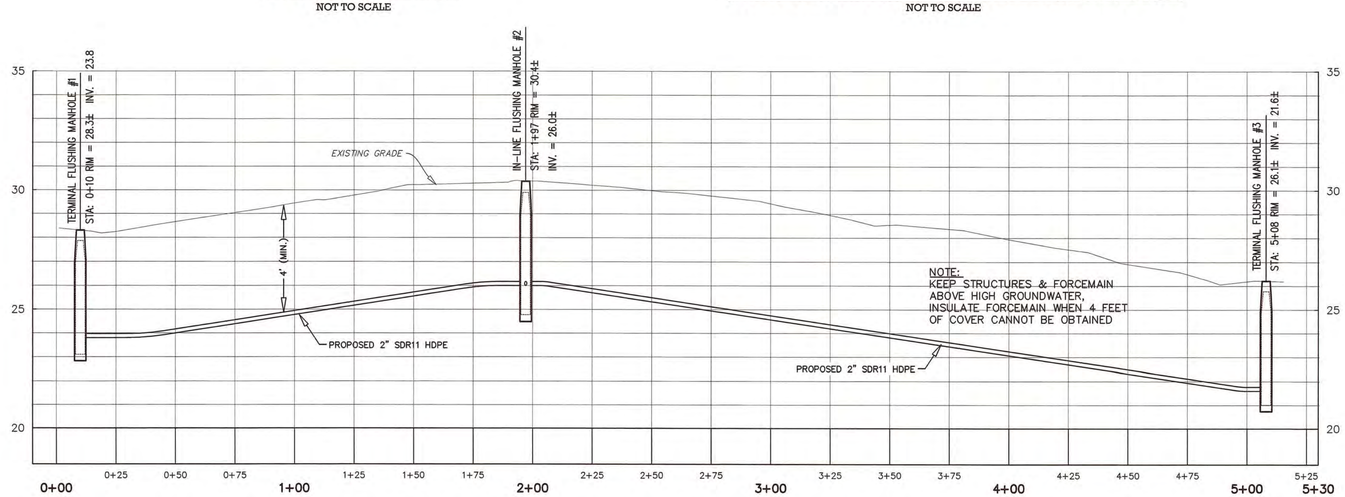
NOT TO SCALE



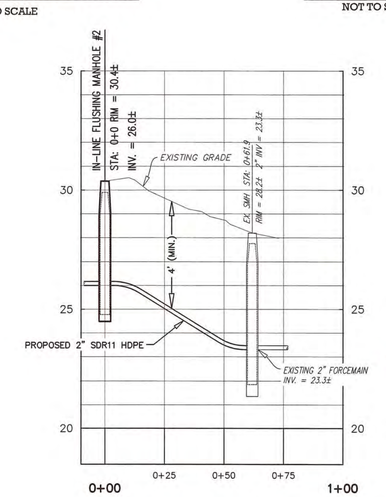
SMH #2 PLAN VIEW

NOT TO SCALE

PROFILE SCALE
1 inch = 3 feet (vertical)
0 0.5 1 1.5 3 6 9
0 7.5 15 22.5 30 45 60 90
1 inch = 30 feet (horizontal)
PLAN SCALE



PROFILE PROPOSED SMH #1 THROUGH PROPOSED SMH #3



PROFILE PROPOSED SMH #2 TO EX. SMH

Prepared By:
BRACKEN ENGINEERING, INC.
49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282
19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

COMMONWEALTH OF MASSACHUSETTS
DONALD F. BRACKEN JR.
CIVIL
No. 37071
REGISTERED PROFESSIONAL ENGINEER

10-17-19

SEWER EXTENSION DESIGN IN NANTUCKET, MASSACHUSETTS

Prepared For:

AUSTIN FARM ESTATE HOME OWNERS ASSOCIATION TRUST

HIGH BRUSH PATH

No.	Date	Revision Description	By

Date:	Drawn:	Checked:	Sheet:
OCTOBER 17, 2019	RMM/ERC/BEI	DFB/AMG	1 of 1

S:\Autocad Drawings\Nantucket\High Brush Path\15 High Brush Path\High Brush Path - Sewer Extension Rev1.dwg

REQUEST FOR DETERMINATION OF APPLICABILITY

Install Drainage at Sparks Avenue Entrance to
Gas Station - Car Wash

At

41 & 43 Sparks Avenue
Nantucket, MA

December 20, 2019

Prepared for

Mid-Island Service Limited Partnership

By

BLACKWELL & ASSOCIATES, Inc.
Professional Civil Engineers & Land Surveyors
20 Teasdale Circle
Nantucket, MA 02554
508-228-9026

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Nantucket
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Applicant:

Mid-Island Service Limited Partnership
Name

E-Mail Address

10R Airport Road
Mailing Address

Nantucket
City/Town

MA
State

02554
Zip Code

Phone Number

Fax Number (if applicable)

2. Representative (if any):

Blackwell & Assoc., Inc.
Firm

Jeffrey Blackwell
Contact Name

jeff@blackwellsurvey.com
E-Mail Address

20 Teasdale Circle
Mailing Address

Nantucket
City/Town

MA
State

02554
Zip Code

508-228-9026
Phone Number

Fax Number (if applicable)

B. Determinations

1. I request the Nantucket Conservation Commission make the following determination(s). Check any that apply:

☒ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.

☒ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.

☒ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.

☒ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Nantucket
Name of Municipality

☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

41 & 43 Sparks Avenue
Street Address

Nantucket
City/Town

55
Assessors Map/Plat Number

267.4 & 267.3
Parcel/Lot Number

b. Area Description (use additional paper, if necessary):

The property is a developed commercial lot located on the Sparks Ave adjacent to the Stop & Shop.

c. Plan and/or Map Reference(s):

Title	Date
Site Plan of Land	December 20, 2019

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

The applicant proposes to install a trench drain, Stormceptor water quality unit, and 500 gal. dry well at the entrance to the existing car wash and gas station. The proposed work is across Sparks Ave. from a wetland resource area. The goal is to collect, treat and infiltrate runoff from the Mid-Island gas station and carwash. Currently, storm runoff flows into Sparks Avenue, is collected by the Town drainage structures and flows into the wetland. The proposed drainage will not be connected to the existing Town roadway drainage structures or drain into the resource area shown on the attached site plan.

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☐ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Mid-Island Service Limited Partnership
Name

10R Airport Road
Mailing Address

Nantucket
City/Town

MA — State

02554 — Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Signature of Applicant — Date 12/19/19

Signature of Representative (if any) — Date

Town and County of Nantucket, MA

October 23, 2018

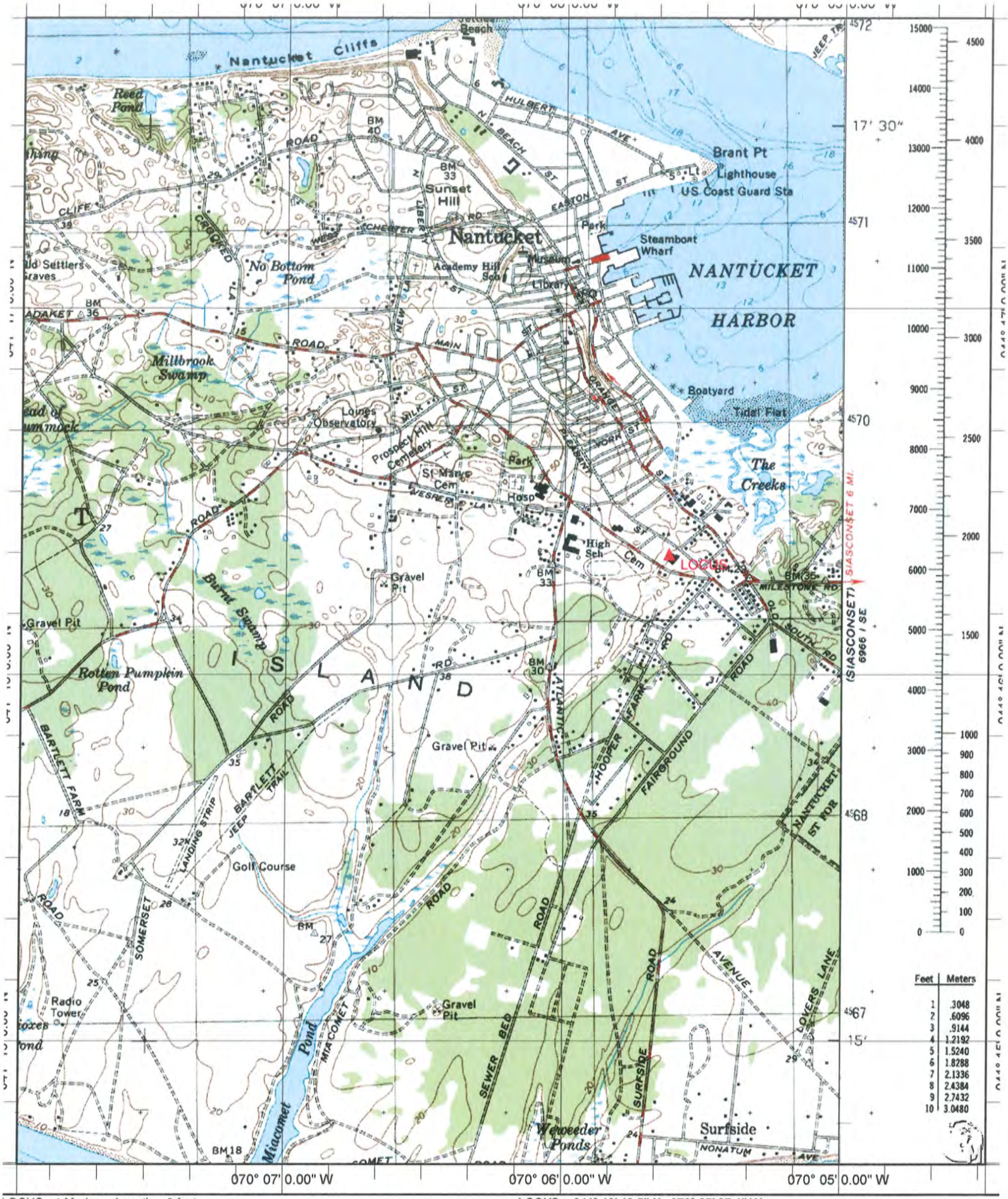
Property Information

Property ID 55 267.4
Location 41 SPARKS AV
Owner MID ISLAND SERVICE LP

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 09/14/2018
Properties updated 10/23/2018



LOCUS - 1 Markers, Length = 0 feet

LOCUS - 041° 16' 19.5" N, 070° 05' 37.1" W

Name: NANTUCKET
Date: 12/18/119
Scale: 1 inch equals 2000 feet

Location: 041° 16' 13.7" N 070° 06' 12.5" W

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Mid-Island Service Prepared by: Haines Hydrogeologic Consulting Project location: Sparks Ave DEP File #:
Nantucket, MA

Check all that apply:

- X Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☐ Vegetation and other indicators of hydrology usedto delineateBVW boundary: fill out Sections I and IIMethod
- ☐ other than dominance test used (attach additional information)

Section I.

15 feet below flag #3

Vegetation	Observation Plot Number: #3 Wet		Transect Number: #3	Date of Delineation: 12/18/19
A. Sample Layer & Plant Species (by common/scientific name)	B. Percent Cover (or basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Cattail	20.5	49%	Yes	Obl
Sedge	10.5	25%	Yes	Facw
Soft Rush	10.5	25%	Yes	Facw+

Isolated Vegetated Wetland at outfall from stormwater drain, excavated basin

* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? **YES** no

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Mid-Island Service Prepared by: Haines Hydrogeologic Consulting Project location: Sparks Ave Nantucket, MA DEP File #:_____

Check all that apply:

- X Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☐ Vegetation and other indicators of hydrology usedto delineateBVW boundary: fill out Sections I and IIMethod
- ☐ other than dominance test used (attach additional information)

Section I.

5 feet above Flag #3

Vegetation	Observation Plot Number: #13 Up		Transect Number: #3	Date of Delineation: 12/18/19
A. Sample Layer & Plant Species (by common/scientific name)	B. Percent Cover (or basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Fire Cherry	10.5	100%	Yes	FacU
Tartarian Honeysuckle	20.5	100%	Yes	FacU
Japanese Honeysuckle	20.5%	100%	Yes	Fac-
Tall Goldenrod	20.5	67%	Yes	FacU-
Switch Grass	10.5	33%	Yes	Fac

Steep slope- excavated basin

* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? yes **NO**

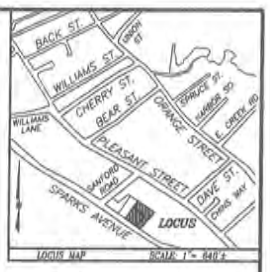
If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

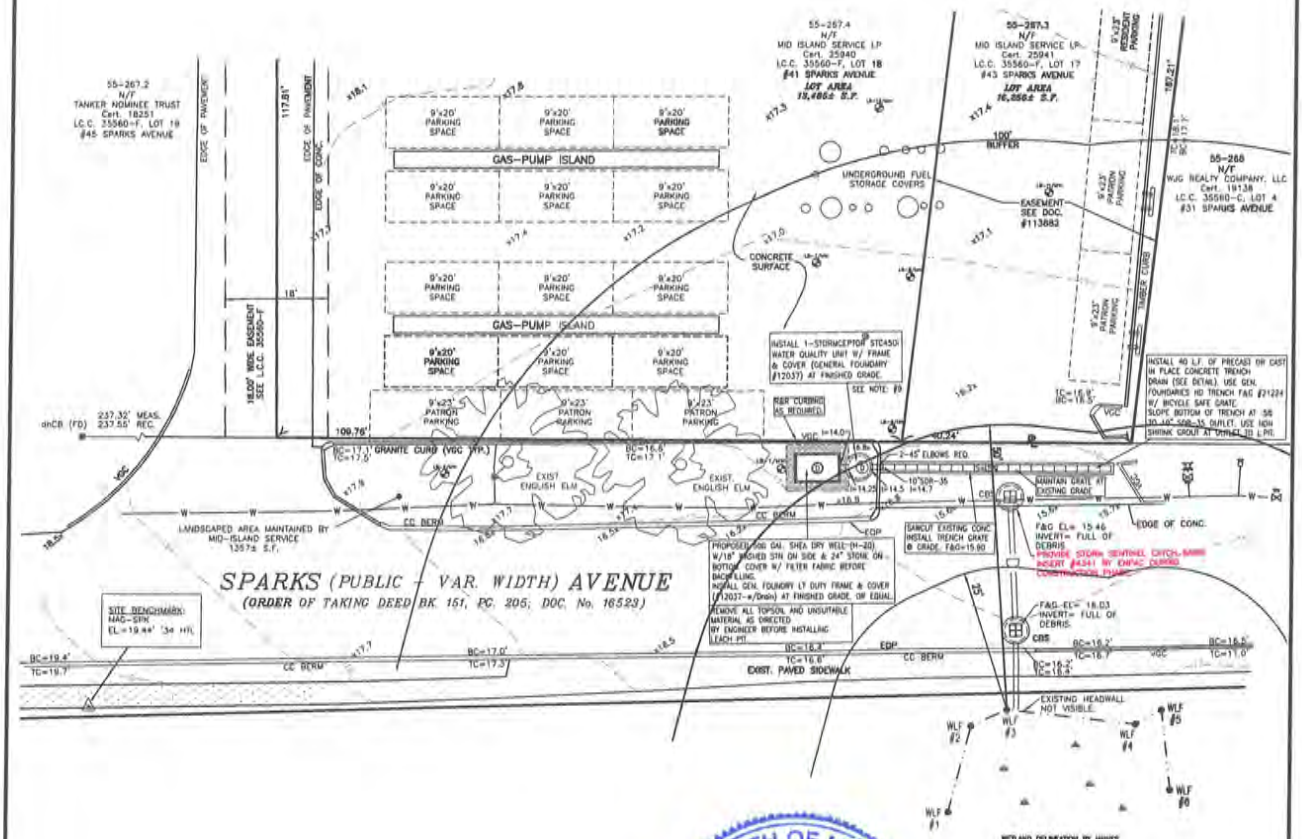
CURRENT ZONING CLASSIFICATION:
Commercial Mid-Island (CMI)

		#41 Existing:	#43 Existing:
MINIMUM LOT SIZE:	5000 S.F.	13,486 S.F.±	16,356 S.F.±
MINIMUM FRONTAGE:	50 FT.	SEE PLAN	SEE PLAN
FRONT YARD SETBACK:	NONE	SEE PLAN	SEE PLAN
SIDE/REAR SETBACK:	NONE	SEE PLAN	SEE PLAN
GROUND COVER %:	50 %	11.3% ±	6.4% ±

LEGEND

- dnCB FD# — DENOTES CONCRETE BOUND w/ DRILL HOLE FOUND
- CBS — DENOTES EXIST. CATCH BASIN
- 75 — DENOTES EXIST. GRADE CONTOUR LINE
- x18.1 — DENOTES EXIST. GRADE SPOT ELEVATION
- TC — DENOTES EXIST. TOP OF CURB ELEVATION
- BC — DENOTES EXIST. BOTTOM OF CURB ELEVATION
- —W— — DENOTES APPROX. LOC. OF BURIED WATER LINE AS MARKED OUT BY NANTUCKET WATER COMPANY
- WV — DENOTES EXIST. WATER GATE VALVE
- W — DENOTES EXIST. WATER METER
- DENOTES EXIST. SOIL BORING/MONITORING WELL
- R&R — DENOTES REMOVE AND REINSTALL





COMMONWEALTH OF MASSACHUSETTS
JEFFREY L. BLACKWELL
No 35388
PROFESSIONAL LAND SURVEYOR

OWNER INFORMATION

MID-ISLAND SERVICE LIMITED PARTNERSHIP
CERT. OF TITLE #25940
L.C.C. 35560-F, LOT 18
ASSESSOR'S MAP 55, PARCEL 267.4
#41 SPARKS AVENUE

OWNER INFORMATION

MID-ISLAND SERVICE LIMITED PARTNERSHIP
CERT. OF TITLE #25941
L.C.C. 35560-F, LOT 17
ASSESSOR'S MAP 55, PARCEL 267.3
#43 SPARKS AVENUE

PERMITTING PLAN
NOT FOR CONSTRUCTION
GRAPHIC SCALE
1 IN FEET
1 inch = 10 ft.

T:\PAUL 2 JOB 65
W:\DRAWFILES\B8594\RDA_MCO-Updated 11-10-19.dwg 12/20/2019 10:34:38 AM ES

BLACKWELL & ASSOCIATES, Inc.
PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
20 TEASDALE CIRCLE
NANTUCKET, MASSACHUSETTS 02554
(508) 228-9026
www.blackwellsurvey.com

PROPOSED CONDITIONS SITE PLAN TO ACCOMPANY
A REQUEST FOR DETERMINATION OF APPLICABILITY
prepared for:
MID-ISLAND SERVICE LIMITED PARTNERSHIP
#41 & #43 Sparks Avenue, Nantucket, MA.
SCALE: 1"=10'
DECEMBER 20, 2019

B8594

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors
20 Teasdale Circle
Nantucket, MA 02554
(508) 228-9026

LETTER OF TRANSMITTAL

DATE 2/14/20	JOB NO. B8594
ATTENTION JO DODO	
RE: ADDITIONAL INFORMATION MID ISLAND SERVICE #41 + #43 SPARKS AVE RDA	

TO NANTUCKET CON COM
#2 BATHING BEACH ROAD
NANTUCKET, MASS.

BY HAND + EMAIL

WE ARE SENDING YOU ☒ Attached ☒ Under separate cover via EMAIL the following items:

☐ Shop drawings ☐ Prints ☒ Plans ☐ Samples ☒ Specifications

☒ Copy of letter ☐ Change order ☒ SECTION DETAIL

COPIES	DATE	NO.	DESCRIPTION
1	2/14/20		COVER LETTER (TO FOLLOW)
2	2/13/20		REVISED SITE PLAN (24X36)
2	"		SECTION DETAIL SHOWING G.W. SEPARATION
2	NO DATE		STORMCEPTOR® OWNER'S MANUAL

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☒ For review and comment ☐ _____

☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

COPY TO CLIENT, ATTORNEY, ED PESCE, FILE

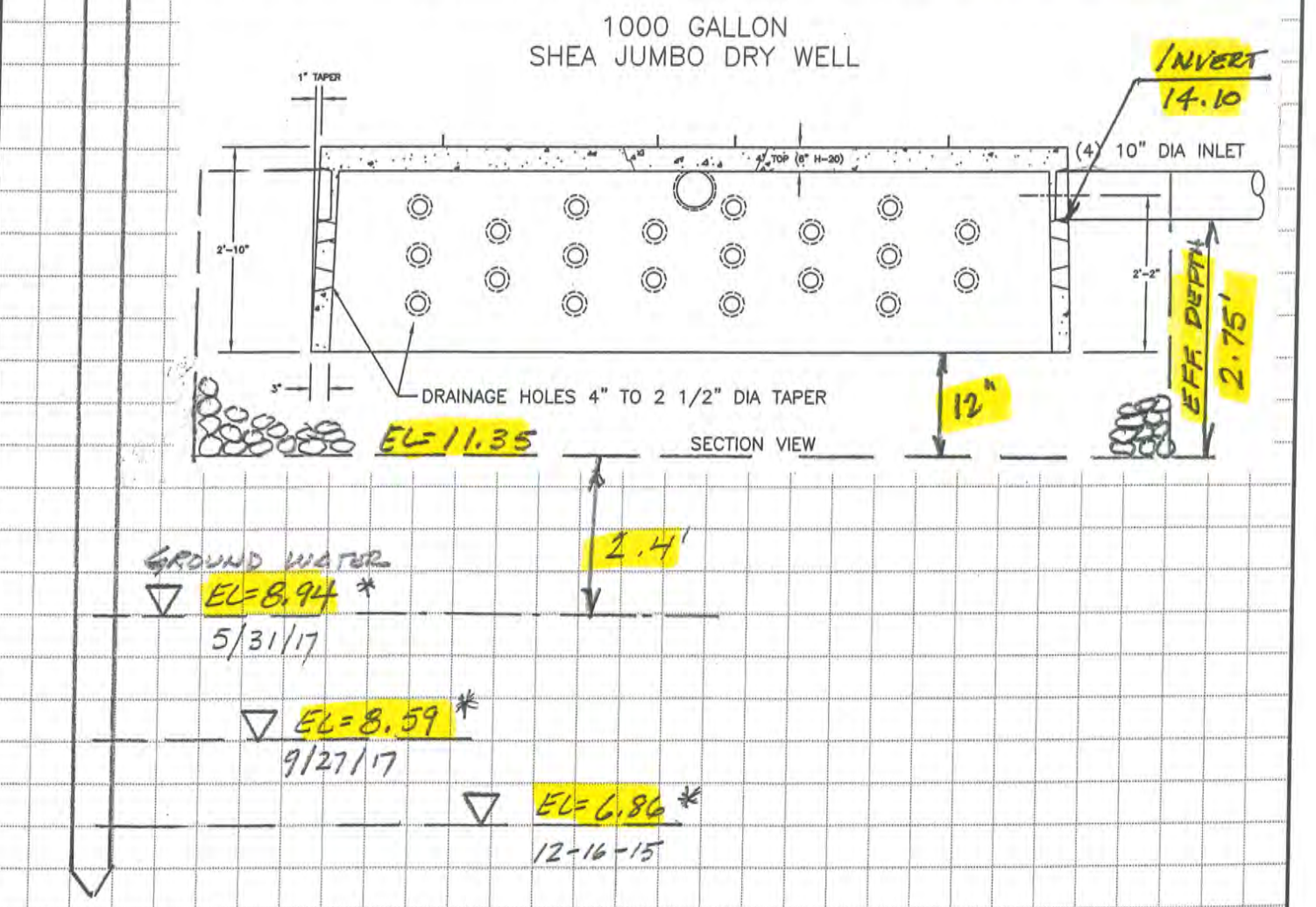
SIGNED: JEFFREY L. BLACKWELL PS

If enclosures are not as noted, kindly notify us at once.

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors & Civil Engineers
20 Teasdale Circle
Nantucket, Massachusetts 02554
www.blackwellsurvey.com
(508) 228-9026

JOB MID ISLAND SERVICE B8594
SHEET NO. 1 OF 1
CALCULATED BY LCA DATE 2/13/20
CHECKED BY DATE
SCALE N.T.S.

COMMONWEALTH OF MASSACHUSETTS
LEO C. ASADOORIAN
NO. 33930
REGISTERED PROFESSIONAL SURVEYOR
2/13/20

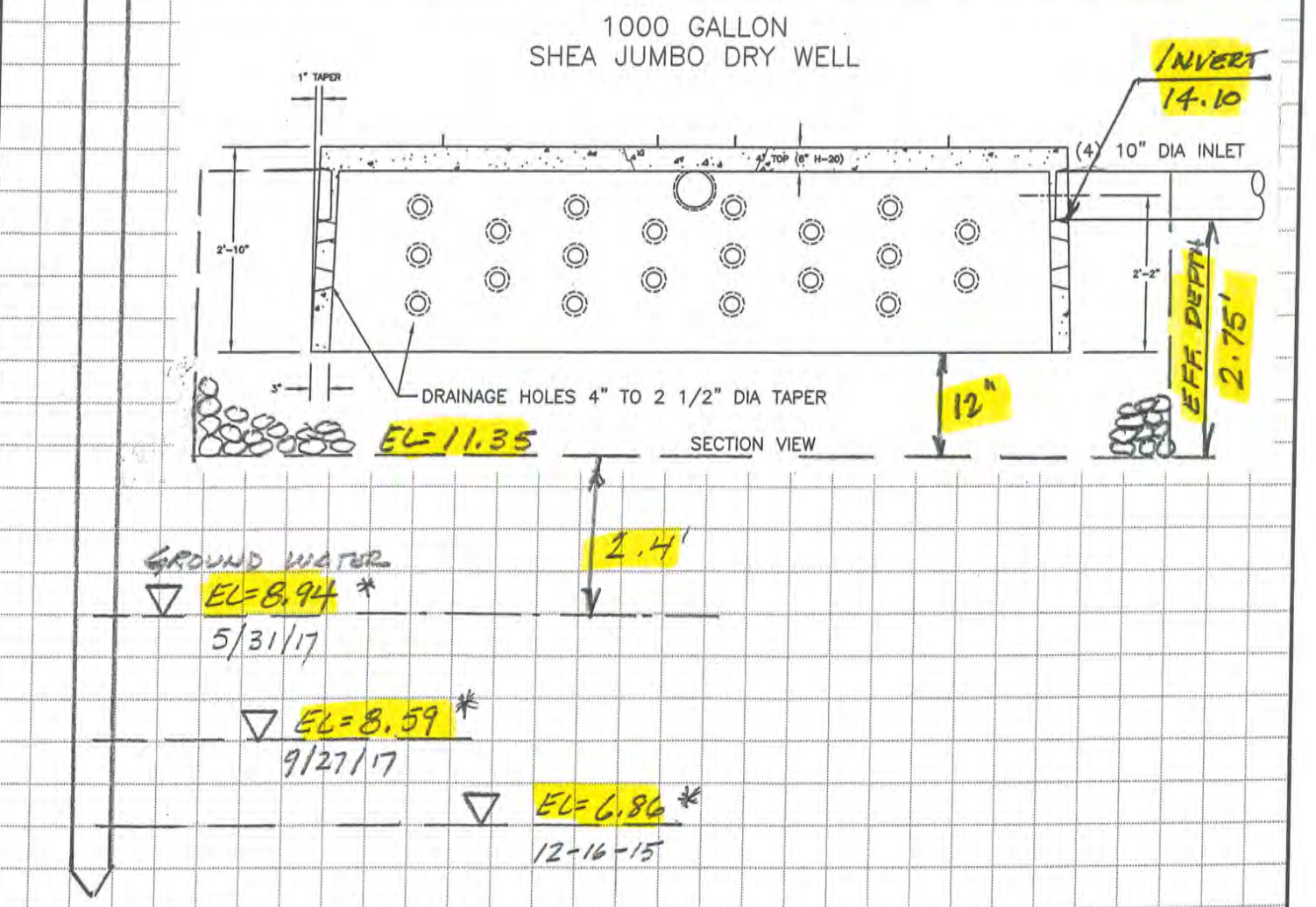


* WELL DEPTH TO GW FROM LORD ASSOCIATES, INC

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors & Civil Engineers
20 Teasdale Circle
Nantucket, Massachusetts 02554
www.blackwellsurvey.com
(508) 228-9026

JOB MID ISLAND SERVICE B8594
SHEET NO. 1 OF 1
CALCULATED BY LCA DATE 2/13/20
CHECKED BY DATE
SCALE N.T.S.

COMMONWEALTH OF MASSACHUSETTS
LEO C. ASADOORIAN
NO. 33930
REGISTERED PROFESSIONAL SURVEYOR
2/13/20



* WELL DEPTH TO GW FROM LORD ASSOCIATES, INC

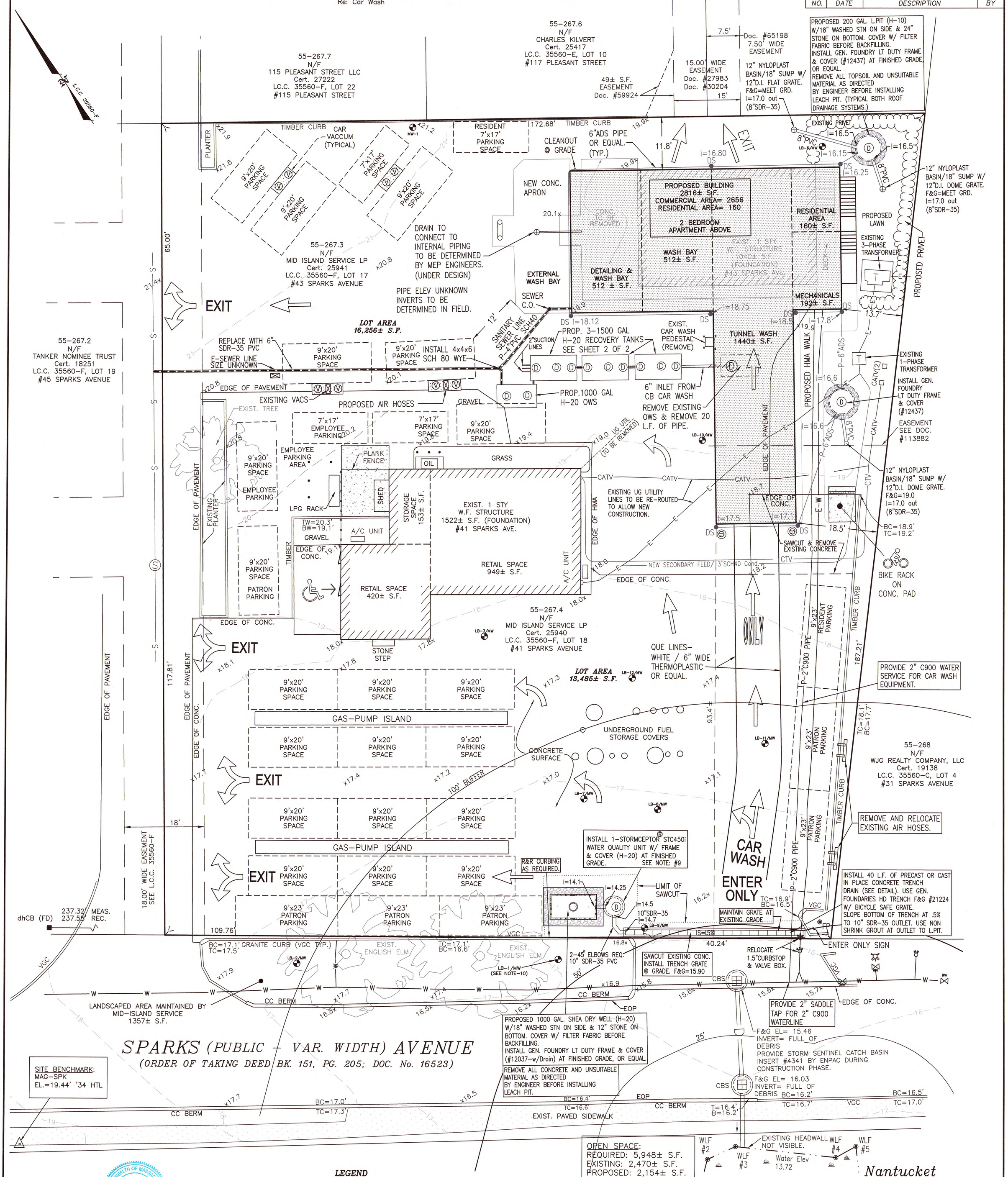
NO.	DATE	DESCRIPTION	BY
6	02/13/20	UPGRADE DRAINAGE/ DETAILS	LCA
5	12/16/19	REVISIONS PER PESCE REVIEW	LCA
4	11/26/19	DRAINAGE REVISIONS	LCA
3	11/14/19	REV. PER CLIENTS COMMENTS	LCA
2	11/12/19	ADD DRAINAGE STRUCTURES	LCA
1	11/08/19	ADD UTILITY MARKOUT	CJA

CURRENT ZONING CLASSIFICATION:
Commercial Mid-Island (CMI)

		#41 Existing:	#43 Existing:	(COMBINED) Proposed:
MINIMUM LOT SIZE:	5000 S.F.	13,485 S.F.±	16,256 S.F.±	29,741 S.F.±
MINIMUM FRONTAGE:	50 FT.	SEE PLAN	SEE PLAN	SEE PLAN
FRONT YARD SETBACK:	NONE	SEE PLAN	SEE PLAN	SEE PLAN
SIDE/REAR SETBACK:	NONE	SEE PLAN	SEE PLAN	SEE PLAN
GROUND COVER % :	50 %	11.3% ±	6.4% ±	14.6% ±

#41 Sparks Avenue:
Ref. Variance Board of Appeals Case No.: 034-80. Doc. #23728.
Re: Gas Station

#43 Sparks Avenue:
Ref. Special Permit Board of Appeals Case No.: 023-84. Doc. #29787.
Re: Car Wash



LEGEND

dhCB FD ■	DENOTES CONCRETE BOUND w/ DRILL HOLE FOUND
Ⓢ	DENOTES EXIST. SEWER MANHOLE
CBS	DENOTES EXIST. CATCH BASIN
25	DENOTES EXIST. GRADE CONTOUR LINE
x28.1	DENOTES EXIST. GRADE SPOT ELEVATION
TC	DENOTES EXIST. TOP OF CURB ELEVATION
BC	DENOTES EXIST. BOTTOM OF CURB ELEVATION
TW	DENOTES EXIST. TOP OF WALL ELEVATION
BW	DENOTES EXIST. BOTTOM OF WALL ELEVATION
—E—	DENOTES DIG-SAFE LOC. OF BURIED ELECTRIC LINES
—CATV—	DENOTES DIG-SAFE LOC. OF BURIED CATV LINES
—W—	DENOTES APPROX. LOC. OF BURIED WATER LINE AS MARKED OUT BY WANNACOMET WATER COMPANY
LB-1/MW	DENOTES EXIST. SOIL BORING/MONITORING WELL
R&R	DENOTES REMOVE AND RESET
T	DENOTES EXIST. TRANSFORMER
CATV	DENOTES EXIST. CATV PEDESTAL
WV	DENOTES EXIST. WATER GATE VALVE
	DENOTES EXIST. WATER METER
R&R	DENOTES REMOVE & RESET
	DENOTES TRAFFIC PATTERN
DS	DENOTES DOWNSPOUT LEADER
	DENOTES POTTED PLANT
	DENOTES AIR FILLING HOSE
V	DENOTES VEHICLE VACUUM

COMMONWEALTH OF MASSACHUSETTS ARTHUR D. GASBARRO CIVIL No. 45951 PROFESSIONAL ENGINEER 2/14/20

OWNER INFORMATION

MID-ISLAND SERVICE LIMITED PARTNERSHIP
CERT. OF TITLE #25940
L.C.C. 35560-F, LOT 18
ASSESSOR'S MAP 55, PARCEL 267.4
#41 SPARKS AVENUE

OWNER INFORMATION

MID-ISLAND SERVICE LIMITED PARTNERSHIP
CERT. OF TITLE #25941
L.C.C. 35560-F, LOT 17
ASSESSOR'S MAP 55, PARCEL 267.3
#43 SPARKS AVENUE

PARKING TABLE:

REQUIRED PARKING:
1) RETAIL STORE/SERVICE: 1 SPACE/ 200 S.F.
AREA OF EXIST./PROPOSED RETAIL STORE/SERVICE= 1,369 S.F.
REQUIRED SPACES= 6.8 (6)SPACES PROVIDED.
2) SPACE/3 EMPLOYEES; 1 SPACES REQUIRED. (2)
COMMERCIAL/INDUSTRIAL: 1 SPACE/ 900 S.F.
AREA OF PROPOSED COMMERICAL/INDUSTRIAL USE= 2,656 S.F.
REQUIRED SPACES= 2.95 (3)

APARTMENT PARKING: 1 SPACE/BEDROOM
2 SPACES REQUIRED (2)

REQUIRED PARKING SPACE TOTAL= 14 PARKING SPACES
PROPOSED PARKING SPACES SHOWN: 24 9'x20' PARKING SPACES
2 7'x17' PARKING SPACES

PERMITTING PLAN
NOT FOR CONSTRUCTION
GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

T:\PAJE 2 JOB 65
V:\DRAWFILES\B8594\MCD-Updated 11-10-19.dwg 2/13/2020 10:06:04 PM EST

BLACKWELL & ASSOCIATES, Inc.
PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
20 TEASDALE CIRCLE
NANTUCKET, MASSACHUSETTS 02554
(508) 228-9026
www.blackwellsurvey.com

PROPOSED CONDITIONS SITE PLAN TO ACCOMPANY
AN MCD SPECIAL PERMIT REQUEST
prepared for:
MID-ISLAND SERVICE LIMITED PARTNERSHIP
#41 & #43 Sparks Avenue, Nantucket, MA.
SCALE: 1"=10'
SEPTEMBER 16, 2019

SHEET 1 of 2
B8594

V:\DRAWFILES\B8594\MCD-Updated 11-10-19.dwg, MCD, 2/13/2020 10:07:03 PM, Canon iPF780-24x36-P.pc3, 24"x36"(ARCH D), 1:1

SITE DESIGN ENGINEERING, LLC.
11 Cushman Street, Middleboro, MA 02346
P: 508-967-0673 F: 508-967-0674

REQUEST FOR DETERMINATION OF APPLICABILITY

Construction of a Septic System Partially Located within a Wetland Buffer Zone

27 Washing Pond Road
Map 31 Parcel 30
Nantucket, MA

Prepared for:

Michael T. Putziger, Trustee
The JRG Realty Trust
C/O Roche, Carens & DeGiacomo
1 Post Office Square
Boston, MA 02109

Prepared By:

Site Design Engineering, LLC
11 Cushman Street
Middleboro, MA 02346

January 31, 2020

SDE No.: 14057

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Nantucket
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Applicant:

The JRG Realty Trust C/O Roche, Carens & DiGiacomo
Name

E-Mail Address

1 Post Office Square
Mailing Address

Boston
City/Town

MA
State

02109
Zip Code

Phone Number

Fax Number (if applicable)

2. Representative (if any):

Site Design Engineering, LLC
Firm

Mark Rits
Contact Name

mrits@sde-ldec.com
E-Mail Address

11 Cushman Street
Mailing Address

Middleboro
City/Town

MA
State

02346
Zip Code

508-802-5832
Phone Number

508-967-0674
Fax Number (if applicable)

B. Determinations

1. I request the Nantucket Conservation Commission make the following determination(s). Check any that apply:

☐ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.

☒ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.

☒ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.

☒ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Nantucket
Name of Municipality

☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

27 Washing Pond Road	Nantucket
Street Address	City/Town
31	30
Assessors Map/Plat Number	Parcel/Lot Number

b. Area Description (use additional paper, if necessary):

See Attached Narrative

c. Plan and/or Map Reference(s):

Septic System Plan - 27 Washing Pond Road	28-Jan-2020
Title	Date
Title	Date
Title	Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

See Attached Narrative

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

See Attached Narrative

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☐ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)

N/A

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Nantucket
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

The JRG Realty Trust C/O Roche, Carens & DiGiacomo
Name

1 Post Office Square
Mailing Address

Boston
City/Town

MA
State

02109
Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

(For the applicant)
Signature of Applicant

31-JAN-2020
Date

Signature of Representative (if any)

31-JAN-2020
Date

PROJECT NARRATIVE

PROJECT DESCRIPTION

27 washing Pond Road
NANTUCKET, MASSACHUSETTS

January 31, 2020

INTRODUCTION
The purpose of this Request for Determination of Applicability (RDA) is to request that the Nantucket Conservation Commission (Commission) approve the extent of the wetland resource area boundary and approve construction of a septic system upgrade portions of which will be locate partially within the 100-foot buffer zone to a Bordering Vegetated Wetland (BVW) on property located at 27 Washing Pond Road (Map 31 Parcel 30) in Nantucket (Subject Property).

This RDA application is being submitted by the following property owner and Applicant:

27 Washing Pond Road
(Map 31 Lot 30)

Property Owner/Applicant
Michael T. Putziger, Trustee
The JRG Realty Trust
C/O Roche, Carens & DeGiacomo
1 Post Office Square
Boston, MA 02109

SITE OVERVIEW & EXISTING CONDITIONS
The Subject Property consists of an approximately 80,120 square foot developed lot located on the south side of Washing Pond Road (see Figures 1 through 3 and Site Plan). To the east and west, the Subject Property is bordered by residentially developed properties. To the north, the Subject Property is bordered by Washing Pond Road and residentially developed properties. To the south, the Subject Property is bordered by Washing Pond (see Figures 1 through 3 and Site Plan). The Subject Property is currently developed and is the site of a single-family residence (SFR), secondary dwelling, pervious driveway, and extensive landscaping/grading. A BVW is found on the southern portion of the Subject Property. The resource area casts buffer zones on to portions of the Subject Property. The landward most of these buffers is the Coastal Bank buffer zone (see Site Plan). The extent of the wetland resource area was delineated by Brian Madden of LEC Environmental (LEC) in late 2019.

PROPOSED ACTIVITIES
The purpose of this RDA is to request that the Commission approve the construction of a septic system upgrade on the Subject Property. Portions of the proposed septic system including plumbing, septic tanks, a septic pump chamber, and portions of a force main will be located within the 100-foot BVW buffer zone but will be entirely outside of the 50-foot BVW buffer zone (see Site Plan). The proposed septic field will be located entirely outside of jurisdictional areas. No other work within any jurisdictional areas is proposed as part of this RDA.

NHESP / MESA
The northern portion of the Subject Property is located within Natural Heritage and Endangered Species Program (NHESP) mapped Estimated and Priority Habitat of Rare and Endangered

Species as indicated on the 2017 NHESP Atlas as available from MassGIS (see Figure 5). No work is proposed within any NHESP habitat areas.

EROSION / SEDIMENTATION CONTROL & CONSTRUCTION PROTOCOL

All proposed activities will occur within portions of the existing driveway and previously altered areas. All work areas are separated from the BVW by extensive altered and landscaped areas. There is no significant danger of siltation into the BVW. Therefore, the Applicant feels that siltation barrier is not required for the proposed work. (see Site Plan).

WETLAND RESOURCE AREAS

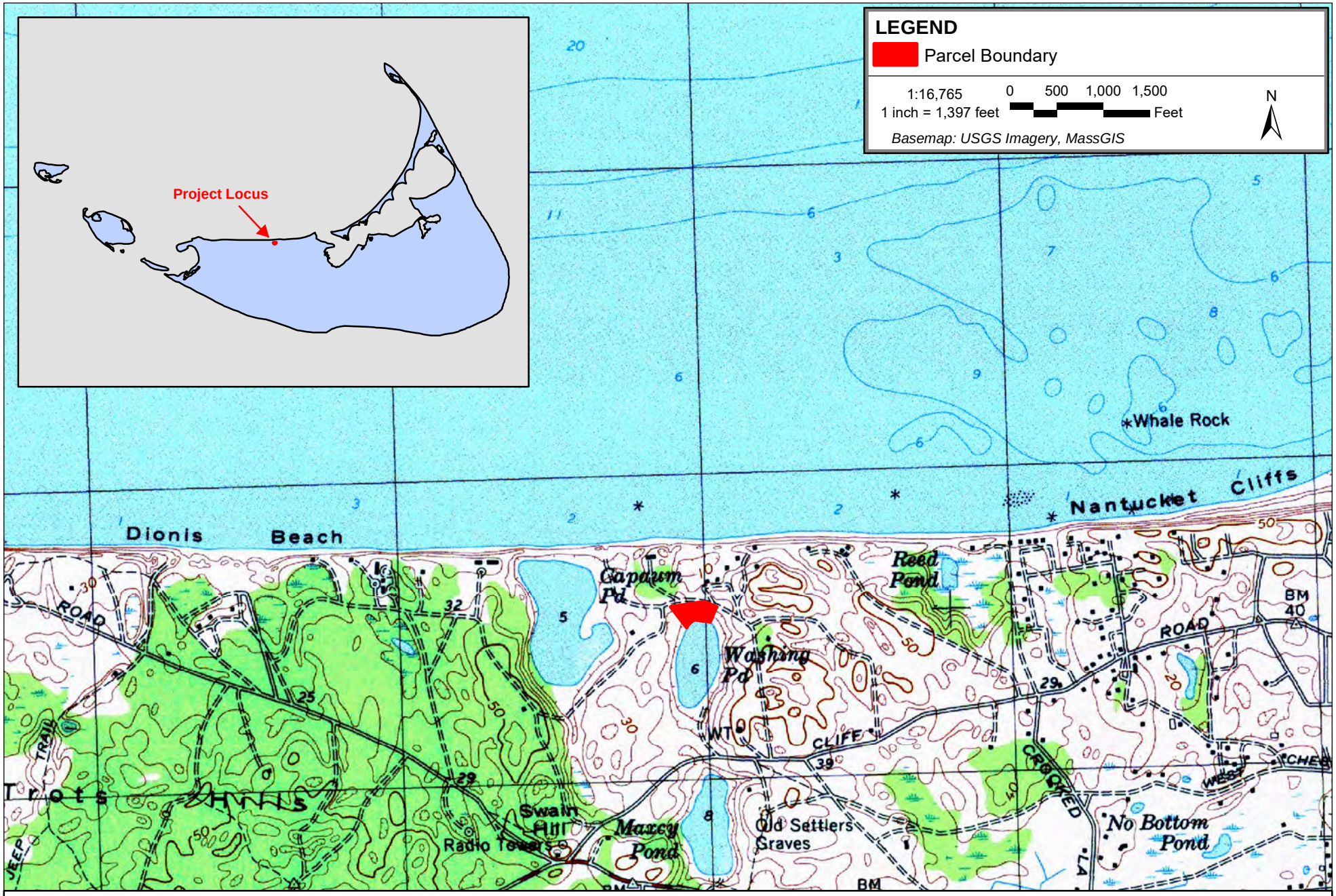
The purpose of this RDA is to request that the Commission approve the upgrade of an existing septic system located partially within the 100-foot BVW buffer zone subject to the jurisdiction of the Nantucket Conservation Commission under the State Wetlands Protection Act (310 CMR 10.00, Act) and its implementing Regulations (Regs) and the Nantucket Wetlands Protection Bylaw (§136-7, Bylaw):

- 100-Foot BVW Buffer Zone

CONCLUSION

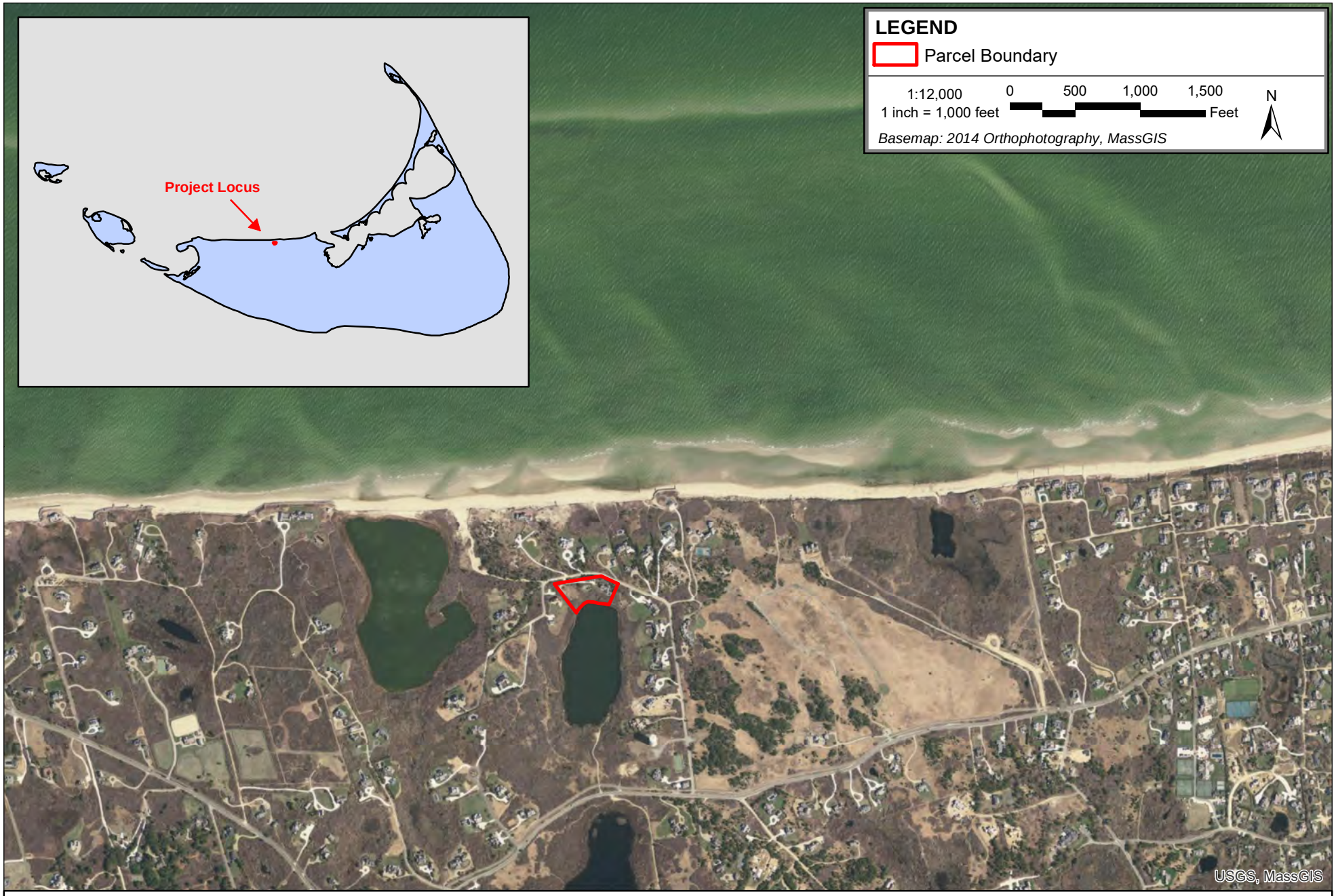
The Applicant is requesting that the Commission approve the upgrade of an existing septic system portions of which will be located partially within the 100-foot BVW buffer zone. The new septic leach facility will be located entirely outside of jurisdictional resource areas. The Proposed Project will provide a net benefit to the resource area and associated buffer zones. All proposed activities are in compliance with State and local regulations and will not result in any significant new or additional adverse impacts to the resource area or associated buffer zones. Therefore, the Applicant respectfully requests that the Commission approve the proposed work included in this RDA.

FIGURES



27 Washing Pond Road - Nantucket, Massachusetts
Map 31 Lot 20
SDE Project No. 14057

Figure 1 - USGS Locus Map
January 31, 2020

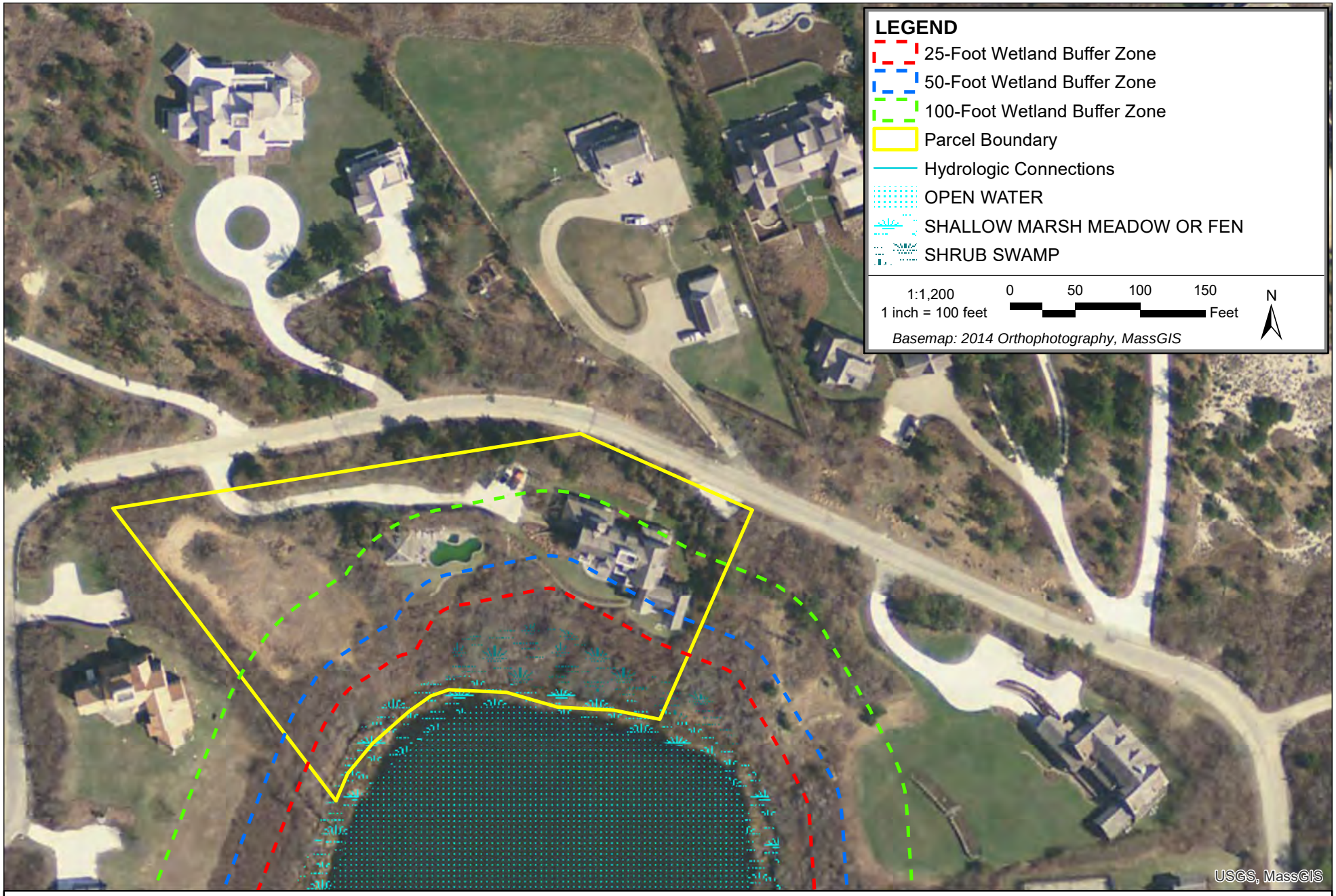


27 Washing Pond Road - Nantucket, Massachusetts
Map 31 Lot 20
SDE Project No. 14057

Figure 2 - Site Overview
January 31, 2020

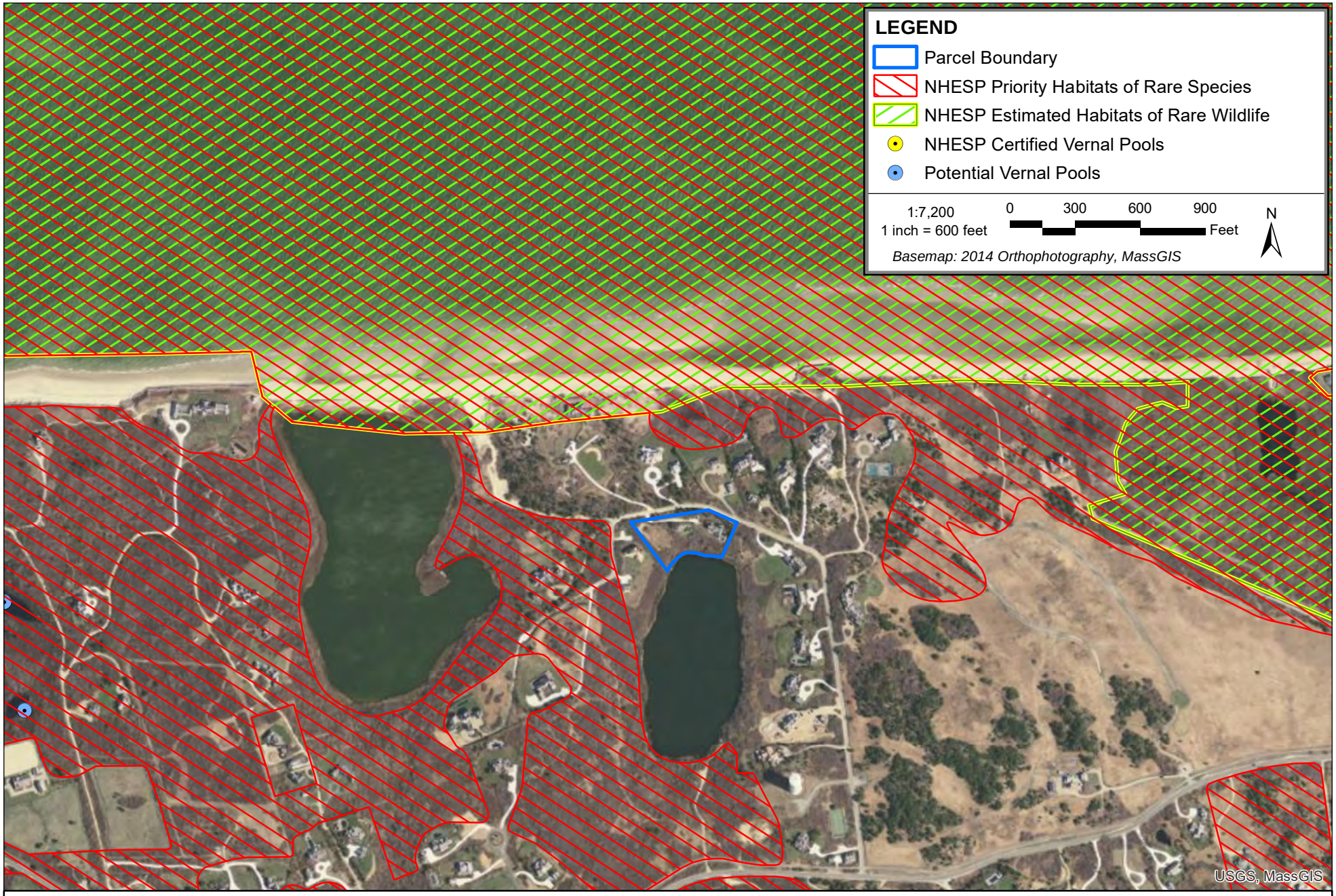
27 Washing Pond Road - Nantucket, Massachusetts
Map 31 Lot 20
SDE Project No. 14057

Figure 3 - Detailed Site Overview
January 31, 2020



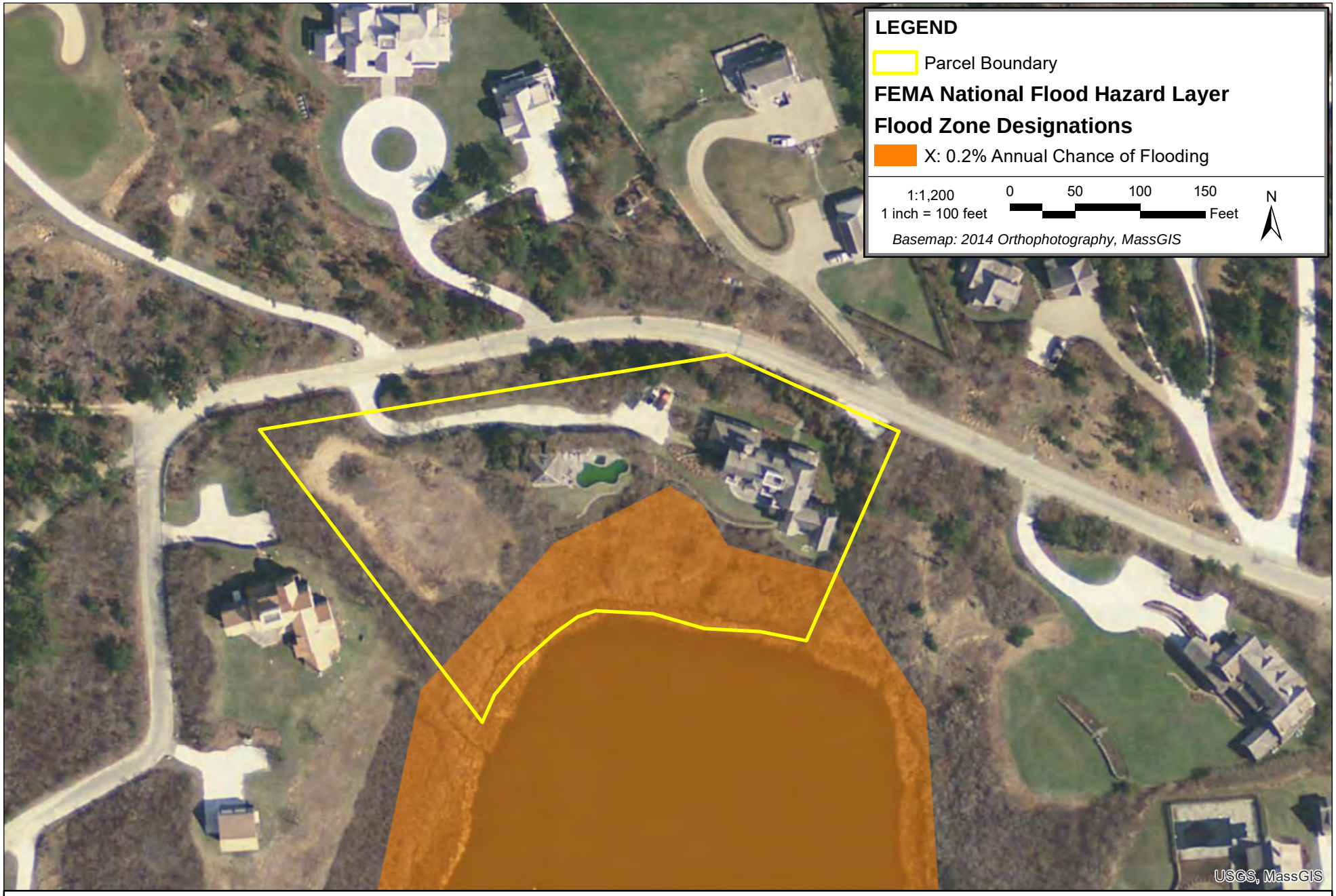
27 Washing Pond Road - Nantucket, Massachusetts
Map 31 Lot 20
SDE Project No. 14057

Figure 4 - DEP Listed Wetland Boundaries
January 31, 2020



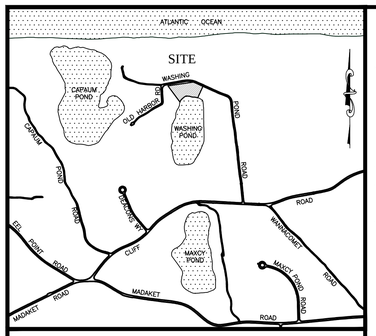
27 Washing Pond Road - Nantucket, Massachusetts
Map 31 Lot 20
SDE Project No. 14057

Figure 5 - NHESP Habitat
January 31, 2020



27 Washing Pond Road - Nantucket, Massachusetts
Map 31 Lot 20
SDE Project No. 14057

Figure 6 - FEMA Flood Zones
January 31, 2020



LOCUS NOT TO SCALE

LEGEND

EXISTING

- PROPERTY LINE
- CB/FD — CONCRETE BOUND/FOUND
- 18 — TOPOGRAPHIC CONTOUR
- 17.6× — SPOT ELEVATION
- LANDSCAPING
- BRUSH LINE
- TREE LINE
- S — SEWER SERVICE
- W — WATER MAIN
- WG — WATER GATE
- E — ELECTRIC SERVICE
- TP-2 — TEST PIT

PROPOSED

- 19.0+ — SPOT ELEVATION
- S — SEWER SERVICE
- W — WATER SERVICE

GENERAL NOTES:

1. EXISTING CONDITIONS INFORMATION WAS COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY SITE DESIGN ENGINEERING, LLC. AND SUPPLEMENTED WITH RECORD PLAN INFORMATION.
2. ELEVATIONS ARE REFERENCED TO NAVD88.
3. THE SITE IN NOT LOCATED WITHIN ANY KNOWN FLOOD HAZARD ZONES AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY–PANEL NUMBER 250230 0067 G, DATED JUNE 9, 2014.
4. THIS PLAN AND ANY ACCOMPANYING CERTIFICATIONS DO NOT CONSTITUTE A CERTIFICATION OF TITLE TO THE PROPERTY DISPLAYED HEREON. THE OWNER OF LOCUS AND ABUTTING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.
5. EXISTING UTILITY LINES SHOWN ON THIS PLAN ARE FROM AVAILABLE INFORMATION AND ARE APPROXIMATE LOCATIONS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. SITE DESIGN ENGINEERING, LLC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED.

J. MARCKLINGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
P.O. BOX 896
NANTUCKET, MA. 02554
(310) 945-7054

ZONING REQUIREMENTS:

THE SITE IS ZONED LIMITED USE 2 (LUG2)

	REQUIRED
LOT AREA	80,000 S.F.
LOT FRONTAGE	150 FT.
FRONT YARD SETBACK	35 FT.
REAR YARD SETBACK	15 FT.
SIDE YARD SETBACK	15 FT.
MAX. GROUND COVER RATIO	4 %

OVERLAY DISTRICT APPLICABILITY

NONE

SOIL DATA

SOIL EVALUATION & PERCOLATION TESTS PERFORMED ON: 10/30/19 BY MARK RITS FROM SITE DESIGN ENGINEERING LLC. AND WITNESSED BY RICHARD RAY FROM THE NANTUCKET BOARD OF HEALTH.

TP–1

0"		14.7
	A — LOAMY SAND, 6YR3/2	
18"		13.2
	B — MEDIUM SAND, 10YR6/3	
36"		11.7
	C — FINE SAND, 2.5Y8/3, RATE < 2 MIN./IN.	
120"	GROUNDWATER > 120" WEEPING: NONE STANDING: NONE	4.7

TP–2

0"		14.1
	A — LOAMY SAND, 10YR3/2	
19"		12.5
	B — LOAMY SAND, 10YR6/6	
30"		11.6
	C1 — SAND, 10YR7/6	
69"		8.4
	C2 — SAND, 2.5Y8/4, RATE < 2 MIN./IN.	
120"	GROUNDWATER: 120" WEEPING: NONE STANDING: NONE	4.1

SOIL DATA

SOIL EVALUATION & PERCOLATION TESTS FOR TP–3 PERFORMED ON: 1/22/20 BY DANIEL C. MULLOY P.E. FROM SITE DESIGN ENGINEERING LLC. AND WITNESSED BY ARTELL CROWLEY FROM THE NANTUCKET BOARD OF HEALTH.

TP–3

0"		15.5
	A — LOAMY SAND, 10YR3/2	
10"		14.7
	B — LOAMY SAND, 10YR6/6	
28"		13.2
	C2 — SAND, 10YR 7/6, RATE < 2 MIN./IN.	
120"	GROUNDWATER: >120" WEEPING: NONE STANDING: NONE	5.5

CURRENT OWNER:

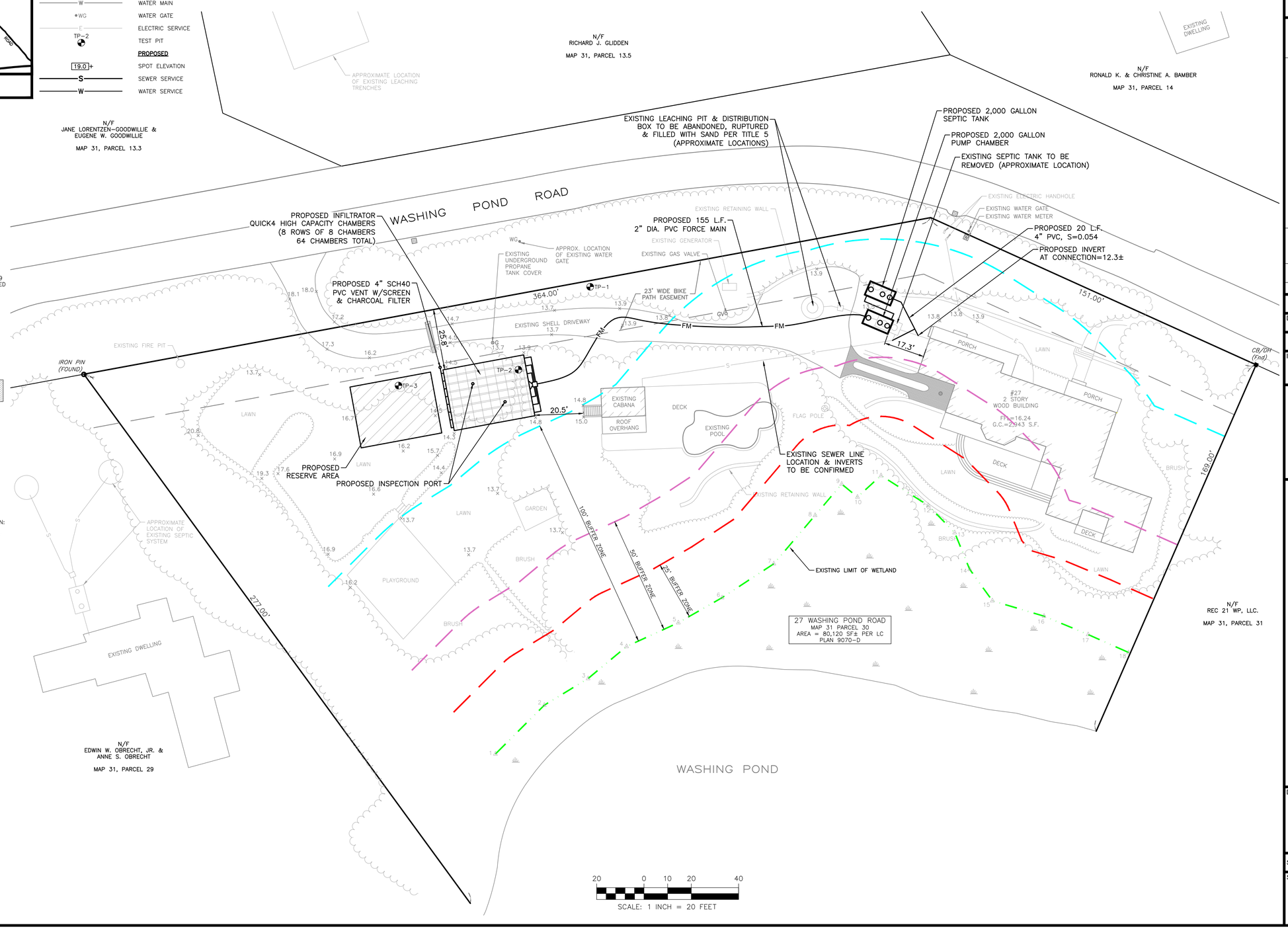
MICHAEL T. PUTZIGER, TRUSTEE
THE JRG REALTY TRUST
C/O ROCHE, CARENS & DEGIACOMO
1 POST OFFICE SQUARE
BOSTON, MA 02109

TITLE REFERENCE:
L.C. CERT. 17274

PLAN REFERENCE:
PLAN NO. 9070–D (LOT 16)

SITE LOCATION:
27 WASHING POND ROAD
NANTUCKET, MASSACHUSETTS

ASSESSORS REFERENCE:
MAP 31, PARCEL 30



SITE DESIGN ENGINEERING, LLC.
11 CUSHMAN STREET
MIDDLEBORO, MA 02346
T: 508-967-0673 F: 508-967-0674
WWW.SDE-LDEC.COM

NO.	DATE	DESCRIPTION	APPROVED

PLAN REVISIONS

DATE: JANUARY 28, 2020

DRAWN BY:	DESIGN BY:	CHECK BY:
HK/SKD	SKD	DCM

PROJECT NO. 14057

ISSUED FOR: APPROVAL

COMMONWEALTH OF MASSACHUSETTS DANIEL C. MULLOY CIVIL No. 41757 REGISTERED PROFESSIONAL ENGINEER

SEPTIC SYSTEM DESIGN PLAN

27 WASHING POND ROAD
ASSESSOR'S MAP 31, PARCEL 30
NANTUCKET, MASSACHUSETTS

PREPARED FOR MICHEAL T. PUTZIGER

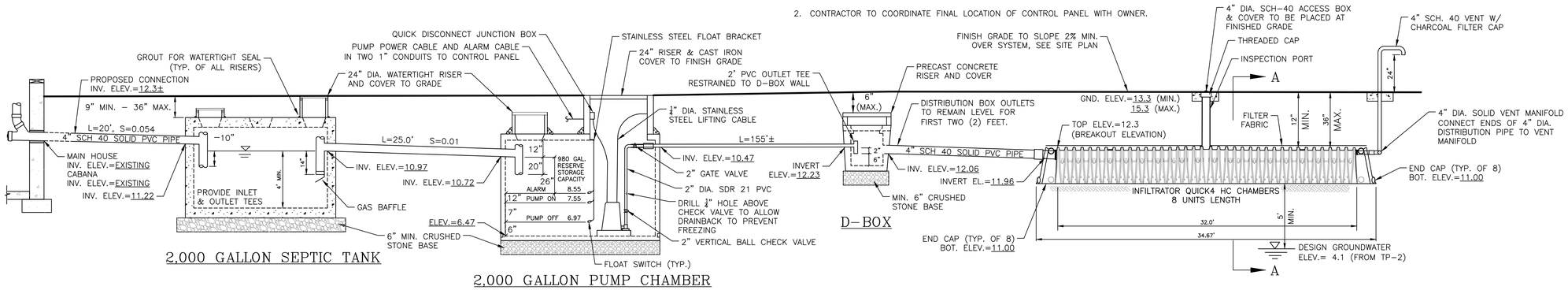
DRAWING TITLE: SEPTIC SYSTEM DESIGN PLAN

SCALE: 1"=20'

SHEET NO. 1 OF 2

NOTES:

1. INSTALL MAGNETIC TAPE WITHIN 12" FROM FINISHED GRADE AROUND ALL BURIED SYSTEM COMPONENTS TO ALLOW FOR FUTURE LOCATION WITH METAL-DETECTOR.
2. CONTRACTOR TO COORDINATE FINAL LOCATION OF CONTROL PANEL WITH OWNER.



SEPTIC SYSTEM PROFILE

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL MAKE APPLICATIONS FOR AND PAY ALL FEES FOR PERMITS REQUIRED TO CONSTRUCT THIS PROJECT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE PREPARATION NECESSARY FOR THE COMPLETE INSTALLATION OF THE PROJECT FACILITIES DURING CONSTRUCTION.
3. ALL CONSTRUCTION METHODS, MATERIALS, AND COMPONENTS ASSOCIATED WITH THE PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM SHALL BE IN CONFORMANCE WITH THE APPROVED PLANS, THE REQUIREMENTS OF 310 CMR 15-TITLE 5 OF THE STATE ENVIRONMENTAL CODE, AND ALL LOCAL BOARD OF HEALTH REGULATIONS UNLESS A WAIVER HAS BEEN GRANTED.
4. ALL CHANGES TO THE PLAN MUST BE APPROVED BY SITE DESIGN ENGINEERING, LLC., AND THE LOCAL BOARD OF HEALTH.
5. ALL SYSTEM COMPONENTS, EXCEPT PERFORATED PIPING, SHALL BE WATERTIGHT AS REQUIRED BY 310 CMR 15.221.
6. THE LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES ARE APPROXIMATE ONLY. THE ENGINEER DOES NOT GUARANTEE THEIR ACCURACY OR THAT ALL UTILITIES AND SUBSURFACE STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL VERIFY SIZE, LOCATION AND INVERT ELEVATIONS OF THE UTILITIES AND STRUCTURES, AS REQUIRED PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES WITH RECORD DATA SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. THE CONTRACTOR IS CAUTIONED TO CONTACT DIG SAFE.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE HIS WORK WITH THE APPROPRIATE HIGHWAY & UTILITY DEPARTMENTS.
8. CONTRACTOR SHALL MAINTAIN ALL EXISTING AND NEWLY INSTALLED UTILITIES IN GOOD WORKING ORDER AND SHALL PROTECT THEM FROM DAMAGE AT ALL TIMES UNTIL THE WORK IS COMPLETED AND ACCEPTED BY THE OWNER.
9. ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION UTILITY CONNECTIONS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY.
10. THE CONTRACTOR SHALL UTILIZE ALL MEASURES AND MATERIALS NECESSARY TO ENSURE THE SAFETY OF ALL PERSONS AND PROPERTIES AT THE SITE DURING CONSTRUCTION. ALL EXCAVATIONS SHALL CONFORM TO CURRENT OSHA STANDARDS.
11. A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHENEVER SANITARY SEWERS PASS BELOW WATER MAINS OR DRAIN LINES. OTHERWISE, WATER SERVICE, DRAIN LINES AND SEWER LINES SHALL BE CAREFULLY ENCASED IN CONCRETE FOR A MINIMUM OF TEN (10) FEET FROM THE CROSSING POINT. WHERE SEWER LINES PASS ABOVE WATER OR DRAIN LINES, THEY SHALL ALL BE ENCASED IN CONCRETE REGARDLESS OF CLEARANCE.

CONSTRUCTION INSPECTION SCHEDULE

1. TO OBTAIN A CERTIFICATE OF COMPLIANCE FROM THE BOARD OF HEALTH THE FOLLOWING INSPECTIONS BY THE ENGINEER AND THE LOCAL BOARD OF HEALTH MUST BE MADE ALONG WITH THE COMPLETION OF AN AS-BUILT PLAN:
   A. EXCAVATION OF UNSUITABLE MATERIAL
   B. PLACEMENT OF CLEAN SAND BACKFILL
   C. INSTALLATION OF ALL SYSTEM COMPONENTS. ALL COMPONENTS MUSTBE INSTALLED AND EXPOSED FOR INSPECTION AND PREPARATION OF AN AS-BUILT PLAN.

CONCRETE STRUCTURES

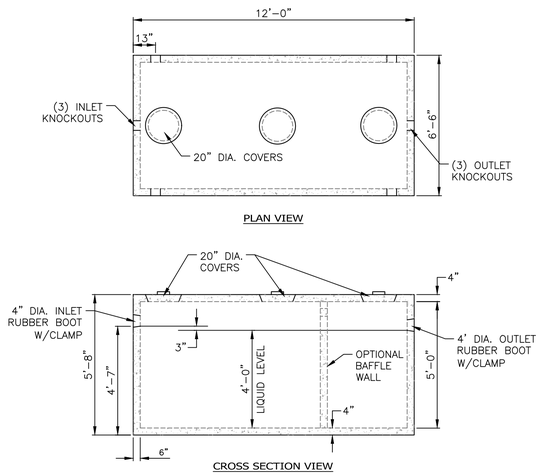
1. ALL SEPTIC TANKS, GREASE TRAPS, DOSING CHAMBERS, AND DISTRIBUTION BOXES SHALL BE SET LEVEL AND TRUE TO GRADE ON A LEVEL STABLE BASE WHICH HAS BEEN MECHANICALLY COMPACTED. IF THE COMPONENT IS PLACED IN FILL, PROPER COMPACTION IS REQUIRED TO ENSURE STABILITY AND TO PREVENT SETTLING. A 6-INCH STONE BASE IS ADEQUATE IF THE COMPONENT IS PLACED ON NATIVE GROUND.
2. ALL CONCRETE STRUCTURES ARE TO EMBOSSED WITH A SEAL STATING THAT THEY MEET ASTM STANDARD C 1227-93. ANY CONCRETE STRUCTURES PLACED WITHOUT THIS SEAL WILL BE REJECTED.
3. THE BACKFILL AROUND EACH CONCRETE STRUCTURE SHALL CONSIST OF SAND, GRAVEL OR SELECT FILL FREE OF ORGANIC DEBRIS, FROZEN EARTH AND STONES OR COBBLES OVER 3 INCHES IN SIZE. ALL BACKFILL SHALL BE PROPERLY COMPACTED TO PREVENT SETTLEMENT AND THE CREATION OF VOIDS.
4. PRE CAST CONCRETE RISERS TO BE INSTALLED WITH A RUBBER GASKET AND CONCRETE GROUT TO ENSURE WATERTIGHT SEAL.

SEWAGE PUMP

1. THE PUMP SHALL BE A MYERS SRM4 NON-CLOG SUBMERSIBLE SEWAGE PUMP CAPABLE OF DELIVERING 44.7 GPM @ 12.6' T.D.H.. THE PUMP MOTOR SHALL BE 0.4 H.P., SINGLE PHASE SERVICE AND CAPABLE OF PASSING 2" SPHERICAL SOLIDS.
2. THE PUMP MANUFACTURER SHALL SUPPLY 1 PUMP WITH GUIDE RAILS, BALL VALVES, FLOAT SWITCHES, LIFTING CHAINS, AND ALL NECESSARY MOUNTING HARDWARE FOR COMPLETE INSTALLATION INSIDE THE WET WELL. INSTALLATION OF THE PUMP AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

PUMP CONTROL PANEL

1. SIMPLEX CONTROL PANEL SHALL BE PANEL QC-II WITH STANDARD OPTIONS MOUNTED IN NEMA 1R ENCLOSURE WITH THE FOLLOWING OPTIONAL COMPONENTS:
   A.) PUMP RUN INDICATOR AND RUNNING TIME METER FOR THE PUMP.
   B.) PANEL MOUNTED ALARM LIGHT.
   C.) ALARM TEST SWITCH (TEST – OFF – AUTO).
2. ALL CONTROL PANEL EQUIPMENT AND OPTIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION AND SHIPMENT.
3. ALARM CIRCUIT SHALL BE INDEPENDENT OF THE PUMP POWER CIRCUIT AND SHALL BE ACTIVATED BY HIGH WATER LEVEL IN WET WELL.
4. CONTRACTOR TO COORDINATE LOCATION OF CONTROL PANEL W/ OWNER. PER LOCAL REQUIREMENTS, THE ALARM MUST BE LOCATED WITHIN HABITABLE PORTIONS OF THE BUILDING AND INCLUDE AN AUDIBLE ALARM. ALARM TO BE HARDWIRED, NO PLUGS.

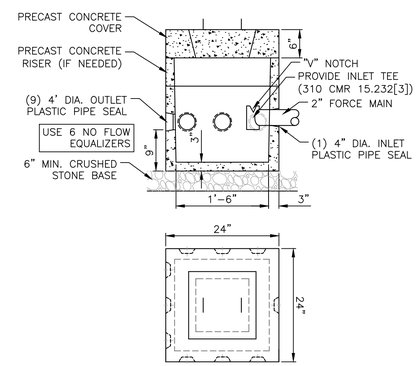


2,000 GALLON SEPTIC TANK

SEPTIC TANK AS MANUFACTURED BY SHEA CONCRETE PRODUCTS OR APPROVED EQUAL.

PRE-CAST CONCRETE TANK)

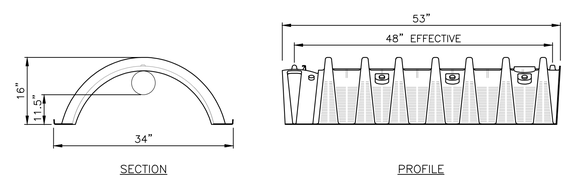
NOT TO SCALE



9-OUTLET DISTRIBUTION BOX AS MANUFACTURED BY SHEA CONCRETE PRODUCTS OR APPROVED EQUAL

DISTRIBUTION BOX

NOT TO SCALE



INFILTRATOR® QUICK4 CHAMBER

INFILTRATOR CHAMBER

NOT TO SCALE

DESIGN CALCULATIONS

REGULATIONS USED

STATE: 310 CMR 15.00 – TITLE 5
MUNICIPAL: LOCAL BOARD OF HEALTH
TYPE OF ESTABLISHMENT: 8 BEDROOM RESIDENTIAL DWELLING

DESIGN FLOW

8 BEDROOMS X 110 GPD/BDRM = 880 GPD

SEPTIC TANK

100% X DESIGN FLOW = 880 GPD
200% X DESIGN FLOW = 1,760 GPD
USE 2,000 GALLON SEPTIC TANK

SIZE OF LEACHING FACILITY

PERCOLATION RATE ≤ 2 MPI
L.T.A.R. = 0.74 GAL./DAY/S.F.
REQUIRED LEACHING AREA = 880 GPD/0.74 GPD/S.F. = 1,189.2 S.F.

SYSTEM VOLUME

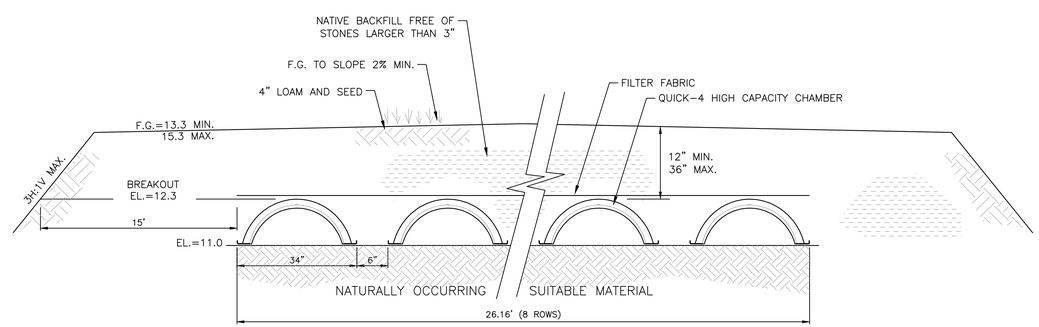
2" FORCE MAIN = 7.48 GAL/CF X 155 FT X 0.0218 SF = 25.3 GAL
DOSE VOLUME = 3 DOSE/DAY = (880 GPD/3) + 25.3 GAL = 245.3 GAL

LEACHING FIELD DESIGN

UTILIZING INFILTRATOR QUICK4 HC CHAMBER
EFF. LEACHING AREA (BED) = 4.73 S.F./L.F.
REQUIRED QUICK4 HC LENGTH = 1,189.2 S.F./4.73 S.F./L.F. = 251.4 L.F.

PROVIDED LENGTH = 34.67 FT. X 8 ROWS = 277.4 L.F.
USE 64 CHAMBERS
PROVIDED AREA = 277.4 L.F. X 4.73 L.F./S.F. = 1,312 S.F. > 1,189.2 S.F.
PROVIDED FLOW = 1,312 S.F. X 0.74 GPD/S.F. = 970.9 GPD > 880 GPD

NOTE: THIS SYSTEM IS NOT DESIGNED FOR USE WITH GARBAGE GRINDERS



8 ROWS OF 8 CHAMBERS (64 TOTAL)

TYPICAL CROSS SECTION DETAIL
INFILTRATOR® QUICK4 CHAMBERS

S.A.S. CROSS SECTION A-A

NOT TO SCALE

SITE DESIGN ENGINEERING, LLC.
11 CUSHMAN STREET
MIDDLEBORO, MA 02346
T: 508-967-0673 F: 508-967-0674
WWW.SDE-LDEC.COM

NO.	DATE	DESCRIPTION	APPROVED

PLAN REVISIONS

DATE: JANUARY 28, 2020

DRAWN BY:	DESIGN BY:	CHECK BY:
HK/SKD	SKD	DCM

PROJECT NO. 14057

ISSUED FOR: APPROVAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL C. MULLOY
CIVIL
No. 41757
REGISTERED PROFESSIONAL ENGINEER

SEPTIC SYSTEM DESIGN PLAN

27 WASHING POND ROAD
ASSESSOR'S MAP 31, PARCEL 30
NANTUCKET, MASSACHUSETTS

PREPARED FOR MICHEAL T. PUTZIGER

DRAWING TITLE: SEPTIC SYSTEM DESIGN PLAN

SCALE: N.T.S.

SHEET NO. 2 OF 2

SITE DESIGN ENGINEERING, LLC.
11 Cushman Street, Middleboro, MA 02346
P: 508-967-0673 F: 508-967-0674

February 14, 2020 SDE No. 19046

Jeff Carlson
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Subject: Request for Minor Modification
DEP File No.: SE48-3255
36 Crooked Lane, Nantucket, MA
Assessors Map 41 Parcel 330

Dear Mr. Carlson:

The purpose of this letter is to request a minor modification for the previously approved project on the above referenced property (Subject Property).

Approval History

The Subject Property was a previously undeveloped developed property. An approval to perform grading and to construct a pervious driveway were issued under SE48-3213 (Issued June 19, 2019). The extent of wetland resource areas and associated buffer zones was delineated as part of this NOI. A second approval issued under SE48-3255m issued November 20, 2019, permitted the construction of utility connections in the previously approved driveway. Booth OOCs are currently valid. Site work permitted under SE48-3213 has been substantially completed on the Subject Property as of the date of this letter.

Proposed Minor Modifications

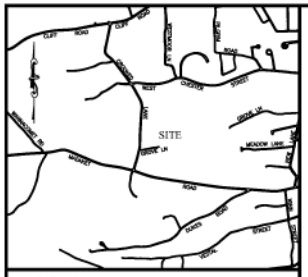
SE458-3255 authorized the construction of a utility connections in the previously approved driveway. At the time of the approval the utility connections extended across to the west side of Crooked Lane. The Applicant is proposing to relocate the utilities within crooked lane to the eastern shoulder of Crooked Lane. These utility connections will extend north along crooked lane and will be located partially within the 50-footIVW buffer zone. The proposed Minor Modification does not require any new or additional waivers and will not result in any significant new or additional adverse impacts to the IVW or associated buffer zones. Therefore, the Applicant respectfully requests that the Commission grant approval for this minor modification as proposed.

If you have any questions, please feel free to contact me via email at mrits@sde-ldec.com or at 508-802-5832.

Respectfully,
Site Design Engineering, LLC.

Mark Rits
Project Manager/Permitting Specialist

Attached:
Proposed Conditions Site Plan (8.5 x 11) February 14, 2020
Nantucket Bylaw Filing Fee Check
Recorded OOC Cover Pages



LOCUS NOT TO SCALE

NOTES:

1. EXISTING CONDITIONS INFORMATION WAS COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY SITE DESIGN ENGINEERING, LLC. ON SEPTEMBER 30, 2019
2. ELEVATIONS ARE REFERENCED TO NAVD88.
3. THE SITE IN NOT LOCATED WITHIN ANY KNOWN FLOOD HAZARD ZONES AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY–PANEL NUMBER 250230 0086 G, DATED JUNE 9, 2014.
4. THIS PLAN AND ANY ACCOMPANYING CERTIFICATIONS DO NOT CONSTITUTE A CERTIFICATION OF TITLE TO THE PROPERTY DISPLAYED HEREON. THE OWNER OF LOCUS AND ABUTTING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.
5. EXISTING UTILITY LINES SHOWN ON THIS PLAN ARE FROM AVAILABLE INFORMATION AND ARE APPROXIMATE LOCATIONS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. SITE DESIGN ENGINEERING, LLC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED.
6. WETLAND DELINEATIONS SHOWN WERE PREVIOUSLY APPROVED BY THE NANTUCKET CONSERVATION COMMISSION. REFER TO 55 GROVE LANE ORDER OF CONDITIONS SE48–3155 ISSUED ON JANUARY 9, 2019 AND 36 CROOKED LANE ORDER OF RESOURCE DELINEATION DATED JUNE 2017.

CURRENT OWNER

36 CROOKED LANE, LLC.
12 AMELIA DRIVE
NANTUCKET, MA 02554

TITLE REFERENCE:
L.C. CERT. 27290
ALSO SEE L.C. CERT. 27408

PLAN REFERENCE:
L.C. PLAN 14132–I (LOT 15)

SITE LOCATION:
36 CROOKED LANE
NANTUCKET, MASSACHUSETTS

ASSESSORS REFERENCE:
MAP 41, PARCEL 330

OVERLAY DISTRICT APPLICABILITY

HUMMOCK POND WATERSHED PROTECTION – ZONE B

TOWN

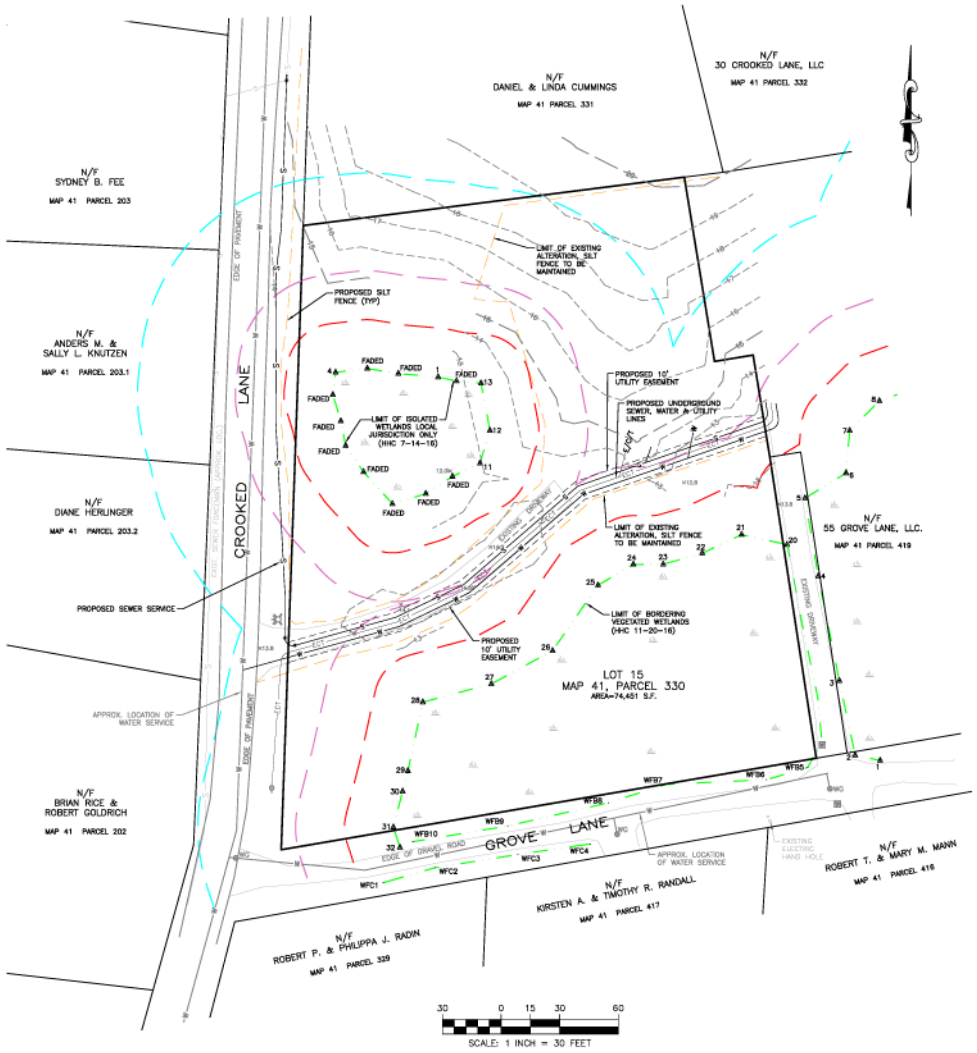
TOWN SEWER

RESIDENTIAL 40 (R–40) ZONING DISTRICT

REGULATION	REQUIREMENT
MIN. LOT AREA	40,000 SQ. FT.
LOT FRONTAGE	75'
FRONT SETBACK	30'
SIDE SETBACK	10'
REAR SETBACK	10'
GROUND COVER RATIO	10%

LEGEND

- HYDRANT
- LIMIT OF WETLAND
- 25 FT. BUFFER ZONE
- 50 FT. BUFFER ZONE
- 100 FT. BUFFER ZONE
- PROPERTY LINE
- SILT FENCE
- 12.8 × SPOT ELEVATION
- 16 TOPOGRAPHIC CONTOUR
- WG WATER GATE
- WATER METER
- W WATER SERVICE
- S SEWER SERVICE
- 30 WETLAND FLAG
- WETLANDS



SITE DESIGN ENGINEERING, LLC.
11 CUSHMAN STREET
MIDDLEBORO, MA 02346
T: 508-967-0673 F: 508-967-0674
WWW.SDE-LDEC.COM

NO.	DATE	DESCRIPTION	APPROVED
1	2/14/2020	REVISED PER CROOKED LN SEWER LAYOUT CHANGE	DCM

PLAN REVISIONS

DATE: NOVEMBER 1, 2019

DRAWN BY:	DESIGN BY:	CHECK BY:
SKD	DCM	DCM/RLM

PROJECT NO. 19046

ISSUED FOR: APPROVAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL C. MULLOY
CIVIL
No. 41757

UTILITY PLAN

36 CROOKED LANE
ASSESSOR'S MAP 41, PARCEL 330
NANTUCKET, MASSACHUSETTS

PREPARED FOR HANLEY DEVELOPMENT

DRAWING TITLE: UTILITY PLAN

SCALE: 1"=30'

SHEET NO. 1 OF 1

163882

2019 00163882
Cert: 27538 Doc: OOC
Registered: 12/03/2019 01:30 PM

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
SE48-3255
MassDEP File #

eDEP Transaction #

Nantucket
City/Town

New owners: Daniel W. Cummings and Linda C. Cummings

A. General Information

1. From: Nantucket
Conservation Commission

2. This issuance is for (check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

a. First Name:
b. Last Name:
c. Organization: 36 Crooked Lane, LLC
d. Mailing Address: 12 Amelia Drive
e. City/Town: Nantucket
f. State: MA
g. Zip Code: 02554

4. Property Owner (if different from applicant):

a. First Name: Same as Applicant
b. Last Name:
c. Organization:
d. Mailing Address:
e. City/Town:
f. State:
g. Zip Code:

5. Project Location:

a. Street Address: 36 Crooked Lane
b. City/Town: Nantucket
c. Assessors Map/Plat Number: 41
d. Parcel/Lot Number: 330

Latitude and Longitude, if known:
d. Latitude: 41 17 01.61
e. Longitude: 70 07 07.00

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
SE48-3255
MassDEP File #

eDEP Transaction #

Nantucket
City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Nantucket	27290
a. County	b. Certificate Number (if registered land)
c. Book	d. Page

7. Dates:

11/01/2019	11/20/2019	11/20/2019
a. Date Notice of Intent Filed	b. Date Public Hearing Closed	c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Utility Plan
a. Plan Title

Site Design Engineering, LLC	Daniel C. Mulloy P.E
b. Prepared By	c. Signed and Stamped by
11/01/2019	1" = 30'
d. Final Revision Date	e. Scale

f. Additional Plan or Document Title	g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

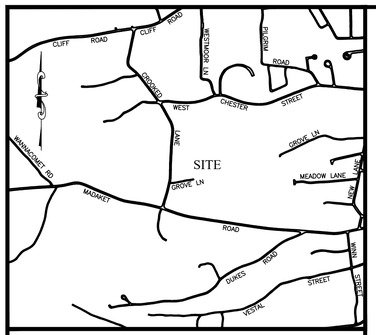
Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

a. ☒ Public Water Supply
b. ☒ Land Containing Shellfish
c. ☒ Prevention of Pollution
d. ☒ Private Water Supply
e. ☒ Fisheries
f. ☒ Protection of Wildlife Habitat
g. ☒ Groundwater Supply
h. ☒ Storm Damage Prevention
i. ☒ Flood Control
j. ☒ Wetland Scenic Views (bylaw)
k. ☒ Recreation (Bylaw)

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



LOCUS NOT TO SCALE

NOTES

1. EXISTING CONDITIONS INFORMATION WAS COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY SITE DESIGN ENGINEERING, LLC. ON SEPTEMBER 30, 2019
2. ELEVATIONS ARE REFERENCED TO NAVD88.
3. THE SITE IN NOT LOCATED WITHIN ANY KNOWN FLOOD HAZARD ZONES AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP COMMUNITY–PANEL NUMBER 250230 0086 G, DATED JUNE 9, 2014.
4. THIS PLAN AND ANY ACCOMPANYING CERTIFICATIONS DO NOT CONSTITUTE A CERTIFICATION OF TITLE TO THE PROPERTY DISPLAYED HEREON. THE OWNER OF LOCUS AND ABUTTING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.
5. EXISTING UTILITY LINES SHOWN ON THIS PLAN ARE FROM AVAILABLE INFORMATION AND ARE APPROXIMATE LOCATIONS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. SITE DESIGN ENGINEERING, LLC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED.
6. WETLAND DELINEATIONS SHOWN WERE PREVIOUSLY APPROVED BY THE NANTUCKET CONSERVATION COMMISSION. REFER TO 55 GROVE LANE ORDER OF CONDITIONS SE48–3155 ISSUED ON JANUARY 9, 2019 AND 36 CROOKED LANE ORDER OF RESOURCE DELINEATION DATED JUNE 2017.

CURRENT OWNER

36 CROOKED LANE, LLC.
12 AMELIA DRIVE
NANTUCKET, MA 02554

TITLE REFERENCE:
L.C. CERT. 27290
ALSO SEE L.C. CERT. 27408

PLAN REFERENCE:
L.C. PLAN 14132–I (LOT 15)

SITE LOCATION:
36 CROOKED LANE
NANTUCKET, MASSACHUSETTS

ASSESSORS REFERENCE:
MAP 41, PARCEL 330

OVERLAY DISTRICT APPLICABILITY

HUMMOCK POND WATERSHED PROTECTION – ZONE B

TOWN

TOWN SEWER

RESIDENTIAL 40 (R–40) ZONING DISTRICT

REGULATION	REQUIREMENT
MIN. LOT AREA	40,000 SQ. FT.
LOT FRONTAGE	75'
FRONT SETBACK	30'
SIDE SETBACK	10'
REAR SETBACK	10'
GROUND COVER RATIO	10%

LEGEND

- HYDRANT
- LIMIT OF WETLAND
- 25 FT. BUFFER ZONE
- 50 FT. BUFFER ZONE
- 100 FT. BUFFER ZONE
- PROPERTY LINE
- SILT FENCE
- 12.8 × SPOT ELEVATION
- 16 TOPOGRAPHIC CONTOUR
- WG WATER GATE
- WATER METER
- W WATER SERVICE
- S SEWER SERVICE
- 30 WETLAND FLAG
- WETLANDS

SITE DESIGN ENGINEERING, LLC.
11 CUSHMAN STREET
MIDDLEBORO, MA 02346
T: 508-967-0673 F: 508-967-0674
WWW.SDE-LDEC.COM

NO.	DATE	DESCRIPTION	APPROVED
1	2/14/2020	REVISED PER CROOKED LN SEWER LAYOUT CHANGE	DCM

PLAN REVISIONS

DATE: NOVEMBER 1, 2019

DRAWN BY:	DESIGN BY:	CHECK BY:
SKD	DCM	DCM/RLM

PROJECT NO. 19046

ISSUED FOR: APPROVAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL C. MULLOY
CIVIL
No. 41757
REGISTERED PROFESSIONAL ENGINEER

UTILITY PLAN

36 CROOKED LANE
ASSESSOR'S MAP 41, PARCEL 330
NANTUCKET, MASSACHUSETTS

PREPARED FOR HANLEY DEVELOPMENT

DRAWING TITLE: UTILITY PLAN

SCALE: 1"=30'

SHEET NO. 1 OF 1

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/03/20 Time: 12:12 pm Weather: Sunny 44°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 360 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection.

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/04/20 Time: 8:59 am Weather: Cloudy 43°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 360 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection.

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/05/20 Time: 9:11 am Weather: Cloudy 38°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 400 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection.

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/06/20 Time: 9:31 am Weather: Rain 40°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 400 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection.

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/07/20 Time: 9:12 am Weather: Cloudy 56°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 350 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection.

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/10/20 Time: 7:19 am Weather: Cloudy 43°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 300 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/11/20 Time: 7:56 am Weather: Rain 43°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 300 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/12/20 Time: 7:59 am Weather: Sunny 40°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 300 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/13/20 Time: 7:56 am Weather: Rainy 42°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 200 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection

2020

SBPF Site Inspection Report/Log

Inspector: Ali Tepsurkayev

Date: 02/14/20 Time: 7:40 am Weather: Sunny 37°F

General Site Conditions:

Site was in good condition. Lower geotubes partially exposed along the structure.

Length of Exposed Geotube:

~ 200 feet.

Type & Quantity of Debris Removed/Action Taken:

Fully inspected the structure from North to South. Drove and walked along the template and the ramps.

No debris was collected during this inspection

OHI Engineering, Inc.
Engineers & Environmental Scientists

SAND SAMPLING REPORT

SIASCONSET BEACH PRESERVATION FUND
SIASCONSET, MA

Prepared for:

DR. DWIGHT R. DUNK, PWS, BCES
EPSILON ASSOCIATES, INC.
3 MILL AND MAIN PLACE, SUITE 250
MAYNARD, MA 01754

Prepared by:

OHI ENGINEERING, INC.
44 WOOD AVENUE
MANSFIELD, MA 02048

OHI PROJECT # 19-2000

Report Date:

FEBRUARY 6, 2019

OHI Engineering, Inc.
Engineers & Environmental Scientists

44 Wood Avenue
Mansfield, MA 02048
Tel (508) 339-3929
Fax (508) 339-3140
www.ohiengineering.com

INTRODUCTION

OHI Engineering, Inc. (OHI) prepared a Sand Sampling Plan for sampling and analysis of sands used at the Siasconset Beach Preservation Fund (SBPF) coastal bank erosion control project in Siasconset, MA (see **Figure 1 – Site Locus**). The Sampling Plan was prepared in response to an Enforcement Order (EO) issued by the Nantucket Conservation Commission (NCC) on December 12, 2019 and was prepared for Epsilon Associates, Inc. on behalf of the SBPF. The Sampling Plan was submitted to NCC on December 11, 2019.

The sampling work was conducted in January 2020. This report summarizes the work conducted and results thereof.

BACKGROUND

To protect and stabilize 'Sconset Bluff, the SBPF commenced construction of an erosion barrier in 2013 and augmented it in 2015. The erosion barrier consists of four tiers of sand-filled geotubes extending along approximately 950 feet of the coastal bank. Sand placed over the geotubes is allowed to erode during storm events; the sand template (Template) is replenished on a regular basis. The top of the Template is about 25 to 35 feet wide. The Template design calls for 22 cubic yards (cy) of sand per linear foot, totalling approximately 20,000 cy of sand on the Template.

During autumn 2019, approximately 10,000 to 12,000 cy of sand was placed on the Template ahead of the winter storm season. Concerns have arisen regarding the source and quality of a subset of that sand ("suspect sand"), about or approaching 4,000 cy, placed during this period. The NCC issued an EO on December 12, 2019 that required SBPF to conduct chemical and biological testing of the suspect sand.

PURPOSE

To determine if the suspect sand differs from sand typically used to re-cover the Template ("typical sand"), OHI collected samples of typical sand within the Template as well as samples of the suspect sand. Samples were collected at an approximate rate of one sample per 1,000 cy of the typical sand fill and at a rate of one sample per 500 cy of the suspect sand that was placed during the fall of 2019. The aforementioned sampling frequency is commonly used to characterize soils in Massachusetts and would be expected to identify variation in soil quality from various sources. Therefore, eight samples of the typical sand (Tan), and eight samples of the suspect sand (Grey) were collected. Eight samples of beach sand between the toe of the Template and Mean High Water and eight samples in the intertidal zone were also collected to determine if eroded suspect sand has been deposited on the beach. A total of 32 samples were collected.

SAMPLE COLLECTION

Sampling locations were laid out on the Template by the project surveyor prior to the start of sampling work. Sampling locations were centered on the top of the Template and spaced every 50 feet with the most southerly location approximately 25 feet from the southerly extent (sample LEDGE-19) of the Template and then every 50 feet until the northerly end of the Template was reached (sample LEDGE-1) for a total of 19 sampling locations. Elevations for each of the 19 Template sample points were determined by the project surveyor. Reference **Figure 2 – Sampling Locations** and **Figure 3 – Cross Section** for location and elevation information.

The sampling work was conducted from Monday January 3, 2020 thru Wednesday, January 5, 2020. Samples were collected at each sample point using a hand-driven GeoProbe sampler. Samples were collected in four-foot clear plastic, Macro-Core® sampling tubes. Sampling depth was eight feet below the top of the Template at each point. The clear plastic sampling tubes were sliced open and the vertical strata was evaluated to determine depth and thickness of the suspect sand at each grid point. Samples were screened in the field with a MiniRAE Lite photoionization detector (PID) with a 10.6 eV UV lamp using the Jar Headspace Method. This method determines the Total Organic Vapors (TOV) in soil in parts per million by volume (ppm_v). One reading of 1.2 ppmv was measured at LEDGE-17 and sampled as LEDGE-7 (GREY). No other readings above the detection limit of the instrument (1 ppm_v) were observed.

In general, the suspect sand was more intermixed with typical sand in the northerly sample locations. More distinct layers of the suspect sand were identified in the southerly sample locations. Reference **Figure 3 – Cross Section** for additional information on sand strata, and sampling locations.

Laboratory samples were collected that represent approximately 1,000 cubic yards of the typical sand fill and 500 cubic yards of the suspect sand fill. Discrete samples were collected for laboratory analyses. The samples sent for laboratory analysis were selected based on visual and olfactory evidence. As noted above, only one PID reading was measured above the instrument's detection limit during the sampling event.

Eight samples were collected of the typical sand and eight samples were collected of the suspect sand that was placed on the Template in fall 2019. Eight beach sand samples were collected of sand between the toe of the Template and Mean High Water and eight additional beach sand samples were collected from the intertidal zone; the beach and intertidal samples were collected in the top one foot. A total of 32 samples were collected.

SAMPLE ANALYSES

Sand samples were placed in pre-cleaned laboratory containers, labelled, logged and delivered under Chain-of-Custody procedures to Alpha Analytical Laboratories, an independent Massachusetts-certified analytical laboratory. Samples were analyzed for the following:

Chemical Constituents

- Total Petroleum Hydrocarbons (TPH)
- Volatile Organic Compounds (VOCs)
- Polynuclear Aromatic Hydrocarbons (PAHs)
- RCRA 8 Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag) plus Zinc (Zn)

Biological Constituents

- Total Coliform (TC)
- Nitrates/Nitrite
- Total Kjeldahl Nitrogen (TKN)
- Phosphorus
- Phosphate

General Chemistry

1) pH

Laboratory analyses were selected based on typical parameters included in Massachusetts Department of Environmental Protection (MassDEP) policy for dredge spoils (Chemical Constituents) and for potential septic system leach field contaminants (Biological Constituents). Note: total nitrogen would be determined by adding Nitrates/Nitrites and TKN.

SAND SAMPLING ANALYTICAL RESULTS

The laboratory data has been collated and tabulated. **Table 1A** provides data for typical sand, **Table 1B** provides data for suspect sand, **Table 1C** provides data for beach samples and **Table 1D** provides data for intertidal samples. **Table IE** provides summary information regarding the sample results. Charts of typical sand and suspect sand sample results for Nitrate/Nitrogen and TKN, Phosphate and Phosphorus, and for TC are provided.

No VOCs, PAHs or TPH were detected in any of the samples at concentrations above the laboratory's method detection limit.

Several metals were detected in the majority of samples. Arsenic was detected in 30 of 32 samples, Barium was detected in 29 of 32 samples, Total Chromium was detected in 30 of 32 samples, Lead was detected in 20 of 32 samples and Zinc was detected in 26 of 32 samples. Mercury was detected in one sample of suspect sand at a concentration only slightly above the method detection limit. Sample results were compared to MassDEP *Technical Update Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil (2016)* and to the respective Reportable Concentration Soil-1 (RCS-1) as listed in the Massachusetts Contingency Plan (MCP) at 310 CMR 40.0000. All results were less than the concentrations listed in the MassDEP Technical Update document meaning they are consistent with natural soil and were less than the RCS-1. Therefore, the metals detected are considered "natural" and not sourced from anthropogenic activities.

Nitrate/Nitrite, TKN, Phosphorus, Phosphate, and pH were relatively consistent between all samples. Concentrations in the intertidal zone were generally lower. *Table 1: Receiving Soil Concentration Multiplying Factors* in MassDEP *WSC#13-500 Similar Soils Provision*

Guidance (Similar Soils Guidance) was used to evaluate if differences in sample results between the typical sand and suspect sand were significant. At the detected concentrations, the Similar Soils Guidance considers a variation of less than five (5) as indicative of similarity. As shown on Table 1E, the sample means vary by about a factor of two or less. Therefore, it may be concluded that the results for Nitrate/Nitrite, TKN, Phosphorus, Phosphate, and pH in typical sand and suspect sand were similar.

TC was detected in all 16 of the typical and suspect sand samples, four of eight beach samples, and three of eight intertidal samples. Template data show mean TC counts as follows:

- suspect sand 263 Most Probable Number per gram (MPN/g);
- typical sand 18.6 MPN/g;
- beach sand 414.9 MPN/g; and,
- intertidal sand 0.2 MPN/g.

The beach sand TC count may indicate localized input by new sources (e.g. birds, seals) as these mean counts exceed the mean observed in the suspect sand, or it may be an artefact of the discrete sample locations since the means are the same order of magnitude with similar ranges. TC was nearly non-existent in the intertidal zone.

At the detected concentrations, the Similar Soils Guidance considers a variation of less than 2.5 as indicative of similarity. The TC sample mean in suspect sand was more than 10 times greater than the sample mean in the typical sand. Therefore, it may be concluded that the results for TC in the typical sand and suspect sand are not similar. TC in the intertidal zone were present but at low levels indicating that the TC had either not survived the salt water environmental and/or were dispersed by wave action.

DISCUSSION

TC was the only analyte where a significant difference was identified between the suspect sand and typical sand on the Template. TCs are a group of related bacteria that are widespread in nature and, with few exceptions, are not harmful to humans. There is a total of 16 species of TC bacteria that are naturally found in the environment. TC in soil are generally not considered to be a potential health concern but are used as an indicator in areas that may be used for production of consumables (i.e., in a vegetable garden or farm). Because ingestion is the primary exposure pathway of concern, the focus of its presence is as an indicator of the potential presence of other harmful bacteria. Drinking water tests commonly use TC bacteria tests to determine the potential presence of other harmful bacteria in drinking water. Since the Template is not used for production of consumables and nearby residences are served by public water supply, and as dermal exposure is not a significant pathway of concern, the presence of TC in sand on the Template would not represent a health concern.

Fecal coliform (FC) are a subgroup of TC that are present specifically in the gut and feces of warm-blooded animals. Because the primary exposure pathway is ingestion, most information regarding FC relates to its presence in drinking water supplies or in recreational water bodies where incidental ingestion may occur. Little information is available about TC and FC in soils. Most of the literature on this topic is related to field experiments to

determine fate and transport of sewage sludge or manure used to amend soils for agricultural purposes. From those sources, FC counts are typically several orders of magnitude lower than TC counts. Edmonds (1976) reported for his experiment of sludge applied in summer a TC of 20 counts/gram dry soil with only 0.3 FC counts/gram dry soil before sludge application. After application, TC to FC were 9.66 x 10^5 TC to 981 FC on day 64; 9.9 x 10^4 TC to 45 FC on day 134; 2.56x10^3 TC to 0.3 FC on day 204; 1.35x10^3 TC to 0 FC on day 267 and on day 469 TC were 62 to 0.2 FC. His experiment of sludge applied in winter showed nearly no FC with TC counts ranging from 232 to 1.05 x 10^5. Generally, FC was two to four orders of magnitude lower than TC. This suggests that the TC counts observed in the suspect sands on the Template [mean count 263 MPN/g (min 27.9; max 1540.7)] would correlate to FC counts in the tenths to single digit MPN/g. Furthermore, FC have poor survival rates in the environment, due to ultraviolet light, temperature, desiccation, and lack of nutrients. Edmonds (1976) found FC counts in sewage sludge applied in the summer fell to zero (0)/g in 267 days, and that FC die-off was more rapid in winter. Moisture content is an important factor in survival of these bacteria in soil. Chandler and Craven (1978) recorded 99% reduction of E. coli in a single day in dry soil. In more recent work by Garcia-Orenes et al. (2007), sewage sludge treated semi-arid soils showed that TC counts dropped sharply in 30 to 40 days, while irrigated soils required 80 to 100 days to achieve the same die-off. Factors contributing to faster decline were drought, soil texture and sandy soils, which are less hospitable than loamy soils, and salt concentration. Park, et al. (2016) conducted an evaluation of 151 datasets from 70 different publications to assess bacterial survival in manure-augmented soil. Their findings were consistent with the prior citations in that soil moisture content, particle size, and temperature are primary factors in bacterial survival with faster die off in dry coarse soil.

Given these data, the TC counts in Template sand are most likely non-FC, based on observation by Edmonds (1976). We recommend the following course of action:

1) Reclaimed sand from the source of the suspect sand should no longer be used.

2) The suspect sand should be spread and mixed with typical sand on the Template. Mixing and spreading the suspect sand on the Template will decrease silt content, allow the sand mix to dry more effectively subjecting the bacteria to desiccation, and subjecting the bacteria to ultraviolet radiation from the sun.

3) Pushing sand off the top of the Template onto the side slope will cause mixing, and will aerate and de-compact the sand allowing it to more effectively dry out and desiccate bacteria, and increase sunlight (UV) exposure to further reduce TC in the sand.

4) Erosion of sand from the Template onto the beach will continue to expose the sand to increased UV and increased salt concentrations to further reduce TC.

SUMMARY

This Report was prepared to provide results of the Sand Sampling Plan conducted at the SBPF Erosion Control Project in response to the EO issued by the NCC to SBPF. A total of 32 sand samples were collected and analyzed for a variety of chemical, biological, and general chemistry parameters as detailed above. After review of the data, the following may

be concluded regarding the sand placed on the Template in the fall of 2019:

1. VOCs, PAHs or TPH were not detected in any of the samples at concentrations above the laboratory's method detection limits.

2. Metal concentrations are consistent with natural soil and were below RCS-1 standards suggesting this material would be suitable for use on a residential lot.

3. Nitrate/Nitrite, TKN, Phosphorus, Phosphate, and pH in typical sand and suspect sand were similar based on the MassDEP Similar Soils Guidance.

4. TC in suspect sand are higher than that observed in the typical sand. This is not considered a health threat because there is no ingestion exposure pathway for TC in sand. FC (if present) is expected to be two to four orders of magnitude lower than TC. Mixing and spreading the suspect sand with the typical sand will lead to increased die-off from desiccation, UV exposure and salt exposure.

Recommendations presented will help reduce coliform counts.

REFERENCES

Massachusetts Contingency Plan (MCP) 310 CMR 40.0000

MassDEP Technical Update Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil (2016)

MassDEP WSC#13-500 Similar Soils Provision Guidance

Edmonds, R.L. (Oct. 1976). Survival of Coliform Bacteria in Sewage Sludge Applied to a Forest Clearcut and Potential Movement into Groundwater. *Applied and Environmental Microbiology*, Vol. 32, No. 4, 537-546.

Chandler, D.S., Craven, J.A. (1978). Environmental factors affecting Escherichia coli and Salmonella typhimurium numbers on land used for effluent disposal. *Australian Journal of Agricultural Research*, 29, 577-585.

García-Orenes, F., Roldán, A., Guerrero, C., Mataix-Solera, J., Navarro-Pedreño, J., Gómez, I., Mataix-Beneyto, J. (2007). *Waste Management*, 1815-1819.

Park, Y., Pachepsky, Y., Shelton, D., Jeong, J., and Whelan, G. (May 2016). Survival of Manure-borne Escherichia coli and Fecal Coliforms in Soil: Temperature Dependence as Affected by Site-Specific Factors. *Journal of Environmental Quality*, 949-957.

OHI Engineering, Inc.
Engineers & Environmental Scientists

FIGURES

Site Locus

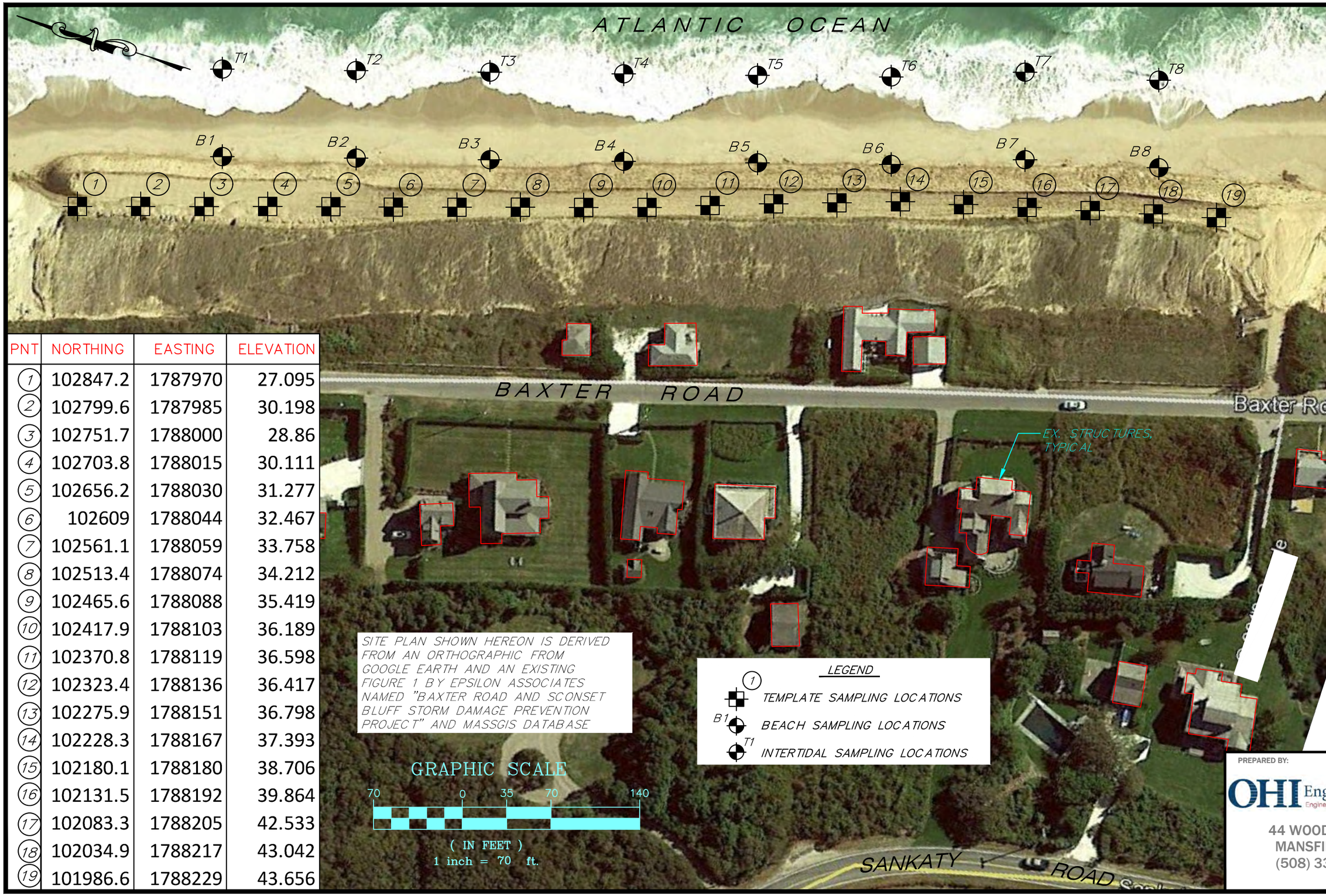
Figure 1

'Sconset Bluff
Siasconset, Massachusetts

OHI Engineering, Inc.
Engineers & Environmental Scientists

44 Wood Avenue · Mansfield, MA

N
W E
S



PNT	NORTHING	EASTING	ELEVATION
1	102847.2	1787970	27.095
2	102799.6	1787985	30.198
3	102751.7	1788000	28.86
4	102703.8	1788015	30.111
5	102656.2	1788030	31.277
6	102609	1788044	32.467
7	102561.1	1788059	33.758
8	102513.4	1788074	34.212
9	102465.6	1788088	35.419
10	102417.9	1788103	36.189
11	102370.8	1788119	36.598
12	102323.4	1788136	36.417
13	102275.9	1788151	36.798
14	102228.3	1788167	37.393
15	102180.1	1788180	38.706
16	102131.5	1788192	39.864
17	102083.3	1788205	42.533
18	102034.9	1788217	43.042
19	101986.6	1788229	43.656

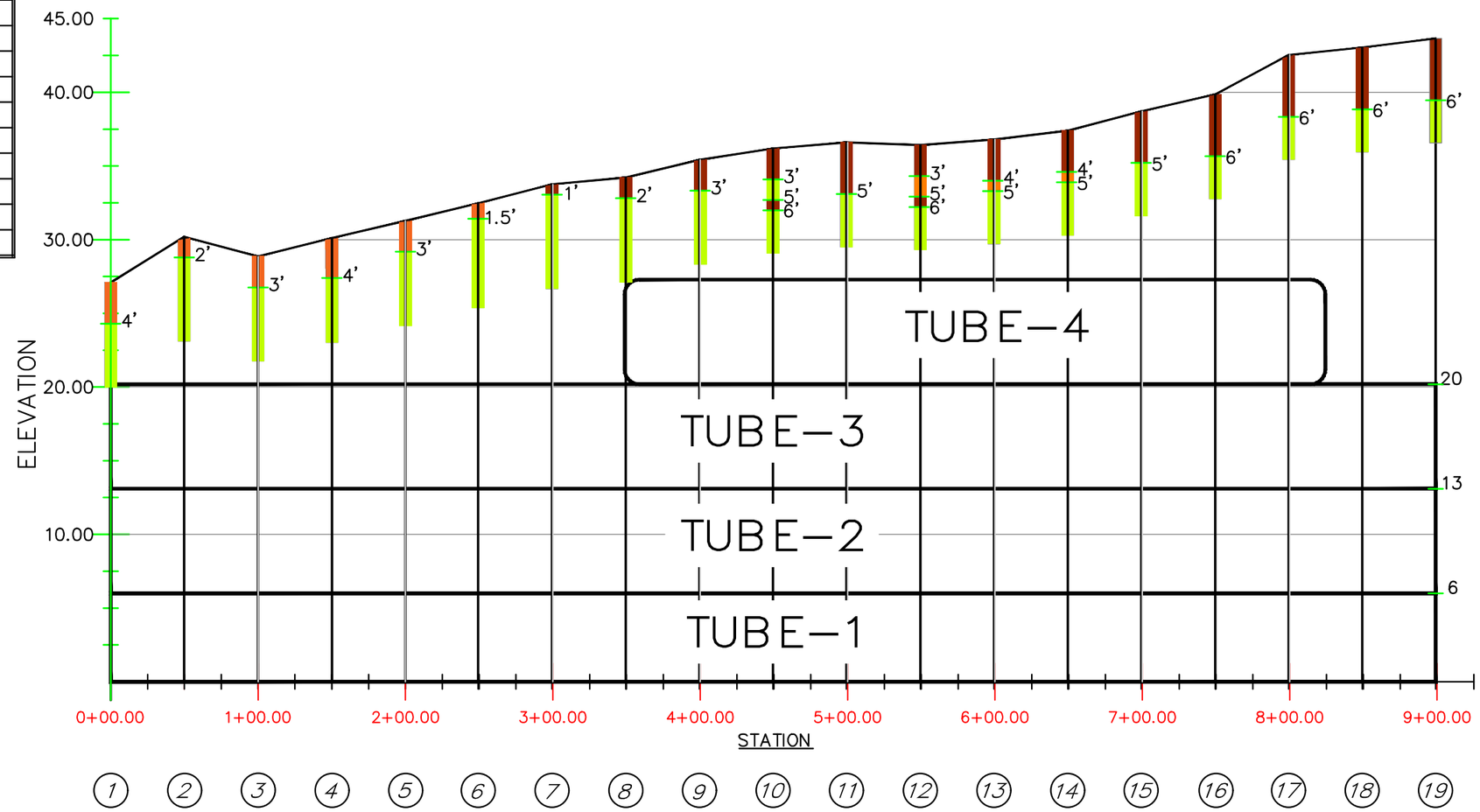
NO:	REVISIONS	DATE	BY	CHKD	APVD
0		1/22/2020	BDJ	JRB	JRB

PROJECT NAME

FIGURE 2
SAND SAMPLING PLAN
SBPF EROSION CONTROL PROJECT
SIACONSET, MA

PREPARED BY:
OHI Engineering, Inc.
Engineers & Environmental Scientists
44 WOOD AVENUE
MANSFIELD, MA
(508) 339-3929

Sample ID	Location	Depth (Ft)
Ledge-1 (TAN)	Boring-1	5-6
Ledge-2 (TAN)	Boring-3	5-6
Ledge-3 (TAN)	Boring-5	5-6
Ledge-4 (TAN)	Boring-7	3-4
Ledge-5 (TAN)	Boring-8	3-4
Ledge-6 (TAN)	Boring-9	5-6
Ledge-7 (TAN)	Boring-11	7-8
Ledge-8 (TAN)	Boring-14	7-8
Ledge-1 (GREY)	Boring-7	0-1
Ledge-2 (GREY)	Boring-8	1-2
Ledge-3 (GREY)	Boring-10	5-6
Ledge-4 (GREY)	Boring-12	2-3
Ledge-5 (GREY)	Boring-13	2-3
Ledge-6 (GREY)	Boring-16	5-6
Ledge-7 (GREY)	Boring-17	4-5
Ledge-8 (GREY)	Boring-19	4-5



SECTION OF TEMPLATE SAMPLING LOCATIONS & DEPTHS

HORIZONTAL SCALE: 1"=90'
VERTICAL SCALE: 1"=9'

NO:	REVISIONS	DATE	BY	CHKD	APVD
0		1/22/2020	BDJ	JRB	JRB

PROJECT NAME

FIGURE 3
SAND SAMPLING SECTION & DEPTHS
SBPF EROSION CONTROL PROJECT
SIACONSET, MA

OHI Engineering, Inc.
Engineers & Environmental Scientists
44 WOOD AVENUE
MANSFIELD, MA
(508) 339-3929

OHI Engineering, Inc.
Engineers & Environmental Scientists

TABLES

Table 1A - Sand Sampling Data - Typical Sand - Ledge (Tan)

Siasconset Beach Preservation Fund
Siasconset, Massachusetts

SAMPLE ID								LEDGE-1 (TAN)	LEDGE-2 (TAN)	LEDGE-3 (TAN)	LEDGE-4 (TAN)	LEDGE-5 (TAN)	LEDGE-6 (TAN)	LEDGE-7 (TAN)	LEDGE-8 (TAN)
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
General Chemistry															
Solids, Total			8	92.2	95.2	93.9	%	93.7	92.2	94	93.9	92.8	94.4	95.2	95
pH (H)			8	6.8	7.4	7.0	SU	6.8	6.9	7	6.9	7	7.1	7.1	7.4
Nitrogen, Nitrate/Nitrite			3	0.9	1.5	1.1	mg/kg	1	0.98	1	0.89	1.1	1.5	1.5	1.2
Nitrogen, Total Kjeldahl			4	100.0	260.0	142.2	mg/kg	100	260	130	140	140	150	120	140
Phosphorus, Total			8	81.0	150.0	119.1	mg/kg	120	140	120	100	150	110	81	150
Phosphate, Total			8	250.0	480.0	368.7	mg/kg	360	440	360	310	460	350	250	480
Microbiological Analysis															
Coliform, Total (MPN)			8	1.7	538.0	18.6	MPN/gm	1.69	3.39	537.95	91.11	53.89	12.89	2.08	34.63
MCP Total Metals															
Arsenic, Total	20	20	8	1.51	2.43	2.01	mg/kg	1.8	2.43	2.33	2.1	2.25	1.51	1.64	2.2
Barium, Total	1000	50	8	2.93	8.96	4.39	mg/kg	4.29	4.1	8.96	4.56	5.37	2.97	2.93	4.12
Cadmium, Total	70	2	0	ND	ND	ND	mg/kg	0.416	0.428	0.423	0.417	0.415	0.41	0.406	0.395
Chromium, Total	100	30	8	2.62	3.79	3.28	mg/kg	3.05	3.79	3.58	3.28	3.77	3.1	2.62	3.19
Lead, Total	200	100	8	2.46	5.02	3.85	mg/kg	4.18	4.35	4.11	4.06	5.02	2.46	2.7	4.74
Mercury, Total	20	0.3	0	ND	ND	ND	mg/kg	0.083	0.078	0.084	0.083	0.071	0.076	0.079	0.07
Selenium, Total	400	0.5	0	ND	ND	ND	mg/kg	2.08	2.14	2.12	2.09	2.07	2.05	2.03	1.98
Silver, Total	100	0.6	0	ND	ND	ND	mg/kg	0.416	0.428	0.423	0.417	0.415	0.41	0.406	0.395
Zinc, Total	1000	100	8	4.87	9.01	7.24	mg/kg	8.53	7.23	9.01	8.51	7.83	5.83	4.87	7.16
MCP Volatile Organics by EPA 5035															
1,1,1,2-Tetrachloroethane	0.1		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
1,1,1-Trichloroethane	30		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
1,1,2,2-Tetrachloroethane	0.005		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
1,1,2-Trichloroethane	0.1		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,1-Dichloroethane	0.4		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,1-Dichloroethene	3		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,1-Dichloropropene			0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
1,2,3-Trichlorobenzene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,2,3-Trichloropropane			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,2,4-Trichlorobenzene	2		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,2,4-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,2-Dibromo-3-chloropropane			0	ND	ND	ND	mg/kg	0.0022	0.0034	0.004	0.0035	0.0068	0.0056	0.0033	0.0067
1,2-Dibromoethane	0.1		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,2-Dichlorobenzene	9		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,2-Dichloroethane	0.1		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,2-Dichloroethene, Total			0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,2-Dichloropropane	0.1		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
1,3,5-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,3-Dichlorobenzene	3		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,3-Dichloropropane			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,3-Dichloropropene, Total	0.01		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
1,4-Dichlorobenzene	0.7		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
1,4-Dioxane	0.2		0	ND	ND	ND	mg/kg	0.059	0.092	0.11	0.092	0.18	0.15	0.088	0.18
2,2-Dichloropropane			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045

SAMPLE ID								LEDGE-1 (TAN)	LEDGE-2 (TAN)	LEDGE-3 (TAN)	LEDGE-4 (TAN)	LEDGE-5 (TAN)	LEDGE-6 (TAN)	LEDGE-7 (TAN)	LEDGE-8 (TAN)
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
2-Hexanone			0	ND	ND	ND	mg/kg	0.0073	0.011	0.013	0.012	0.022	0.019	0.011	0.022
Acetone	6		0	ND	ND	ND	mg/kg	0.018	0.029	0.033	0.029	0.056	0.047	0.027	0.056
Benzene	2		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
Bromobenzene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Bromochloromethane			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Bromodichloromethane	0.1		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
Bromoform	0.1		0	ND	ND	ND	mg/kg	0.0029	0.0046	0.0053	0.0046	0.009	0.0075	0.0044	0.009
Bromomethane	0.5		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Carbon disulfide			0	ND	ND	ND	mg/kg	0.0073	0.011	0.013	0.012	0.022	0.019	0.011	0.022
Carbon tetrachloride	10		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Chlorobenzene	1		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
Chloroethane			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Chloroform	0.4		0	ND	ND	ND	mg/kg	0.0011	0.0017	0.002	0.0017	0.0034	0.0028	0.0016	0.0034
Chloromethane			0	ND	ND	ND	mg/kg	0.0029	0.0046	0.0053	0.0046	0.009	0.0075	0.0044	0.009
cis-1,2-Dichloroethene	0.3		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
cis-1,3-Dichloropropene	0.01		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
Dibromochloromethane	0.005		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Dibromomethane			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Dichlorodifluoromethane			0	ND	ND	ND	mg/kg	0.0073	0.011	0.013	0.012	0.022	0.019	0.011	0.022
Diethyl ether			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Diisopropyl Ether			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Ethyl-Tert-Butyl-Ether			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Ethylbenzene	40		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Hexachlorobutadiene	30		0	ND	ND	ND	mg/kg	0.0029	0.0046	0.0053	0.0046	0.009	0.0075	0.0044	0.009
Isopropylbenzene			0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Methyl ethyl ketone	4		0	ND	ND	ND	mg/kg	0.0073	0.011	0.013	0.012	0.022	0.019	0.011	0.022
Methyl isobutyl ketone	0.4		0	ND	ND	ND	mg/kg	0.0073	0.011	0.013	0.012	0.022	0.019	0.011	0.022
Methyl tert butyl ether	0.1		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Methylene chloride	0.1		0	ND	ND	ND	mg/kg	0.0037	0.0057	0.0067	0.0058	0.011	0.0094	0.0055	0.011
n-Butylbenzene			0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
n-Propylbenzene			0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Naphthalene	4		0	ND	ND	ND	mg/kg	0.0029	0.0046	0.0053	0.0046	0.009	0.0075	0.0044	0.009
o-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
o-Xylene	400		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
p-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
p-Isopropyltoluene			0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
p/m-Xylene	400		0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
sec-Butylbenzene			0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Styrene	3		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
tert-Butylbenzene			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Tertiary-Amyl Methyl Ether			0	ND	ND	ND	mg/kg	0.0015	0.0023	0.0027	0.0023	0.0045	0.0037	0.0022	0.0045
Tetrachloroethene	1		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
Tetrahydrofuran			0	ND	ND	ND	mg/kg	0.0029	0.0046	0.0053	0.0046	0.009	0.0075	0.0044	0.009
Toluene	30		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
trans-1,2-Dichloroethene	1		0	ND	ND	ND	mg/kg	0.0011	0.0017	0.002	0.0017	0.0034	0.0028	0.0016	0.0034
trans-1,3-Dichloropropene	0.01		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Trichloroethene	0.3		0	ND	ND	ND	mg/kg	0.00037	0.00057	0.00067	0.00058	0.0011	0.00094	0.00055	0.0011
Trichlorofluoromethane			0	ND	ND	ND	mg/kg	0.0029	0.0046	0.0053	0.0046	0.009	0.0075	0.0044	0.009
Vinyl chloride	0.9		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022
Xylenes, Total	400		0	ND	ND	ND	mg/kg	0.00073	0.0011	0.0013	0.0012	0.0022	0.0019	0.0011	0.0022

SAMPLE ID								LEDGE-1 (TAN)	LEDGE-2 (TAN)	LEDGE-3 (TAN)	LEDGE-4 (TAN)	LEDGE-5 (TAN)	LEDGE-6 (TAN)	LEDGE-7 (TAN)	LEDGE-8 (TAN)
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
MCP PAHs															
2-Methylnaphthalene	0.7	0.5	0	ND	ND	ND	mg/kg	0.073	0.075	0.074	0.073	0.074	0.073	0.073	0.072
Acenaphthene	4	0.5	0	ND	ND	ND	mg/kg	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Acenaphthylene	1	0.5	0	ND	ND	ND	mg/kg	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Anthracene	1000	1	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Benzo(a)anthracene	7	2	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Benzo(a)pyrene	2	2	0	ND	ND	ND	mg/kg	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Benzo(b)fluoranthene	7	2	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Benzo(ghi)perylene	1000	1	0	ND	ND	ND	mg/kg	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Benzo(k)fluoranthene	70	1	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Chrysene	70	2	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Dibenzo(a,h)anthracene	0.7	0.5	0	ND	ND	ND	mg/kg	0.073	0.075	0.074	0.073	0.074	0.073	0.073	0.072
Fluoranthene	1000	4	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Fluorene	1000	1	0	ND	ND	ND	mg/kg	0.17	0.18	0.18	0.17	0.18	0.17	0.17	0.17
Indeno(1,2,3-cd)pyrene	7	1	0	ND	ND	ND	mg/kg	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Naphthalene	4	0.5	0	ND	ND	ND	mg/kg	0.17	0.18	0.18	0.17	0.18	0.17	0.17	0.17
Phenanthrene	10	3	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Pyrene	1000	4	0	ND	ND	ND	mg/kg	0.1	0.11	0.1	0.1	0.11	0.1	0.1	0.1
Petroleum Hydrocarbon Quantitation															
TPH (C10-C36)	1000		0	ND	ND	ND	mg/kg	35.1	34.9	33.9	34.9	34.3	33.4	33.8	33.3

Notes:

Results in Italics were not detected at the detection limit shown.

Results in Bold were detected at the concentration shown.

ND = Not Detected above laboratory limits

Natural Background = Background levels for "natural" soil and for soil containing coal ash and wood ash associated with fill material.

Reportable Concentrations = The concentration of oil or hazardous material in soil or groundwater which requires notification to MassDEP.

OHI Engineering, Inc.
Engineers & Environmental Scientists

Table 1B - Sand Sampling Data - Suspect Sand - Ledge (Grey)

Siasconset Beach Preservation Fund
Siasconset, Massachusetts

SAMPLE ID								LEDGE-1 (GREY)	LEDGE-2 (GREY)	LEDGE-3 (GREY)	LEDGE-4 (GREY)	LEDGE-5 (GREY)	LEDGE-6 (GREY)	LEDGE-7 (GREY)	LEDGE-8 (GREY)
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	8-Jan-20	8-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
General Chemistry															
Solids, Total			8	91.0	94.0	92.6	%	94	93.4	92.7	91	91.3	92.1	93.1	93.2
pH (H)			8	6.9	7.5	7.2	SU	7.4	7.2	7.1	6.9	7	7.2	7.5	7.1
Nitrogen, Nitrate/Nitrite			4	1.0	2.0	1.3	mg/kg	1.6	1.6	0.95	1	1	1	1.3	2
Nitrogen, Total Kjeldahl			8	160.0	630.0	240.8	mg/kg	180	190	630	160	260	350	200	180
Phosphorus, Total			8	170.0	340.0	229.2	mg/kg	170	190	260	240	230	220	220	340
Phosphate, Total			8	510.0	1000.0	702.4	mg/kg	510	600	810	750	710	680	660	1000
Microbiological Analysis															
Coliform, Total (MPN)			8	27.9	1540.7	263.4	MPN/gm	27.88	347.96	158.44	>=1598.82	1540.67	>=1588.99	535.15	>=1598.53
MCP Total Metals															
Arsenic, Total	20	20	8	2.34	3.19	2.76	mg/kg	2.88	2.52	3.1	3.19	2.63	3.1	2.34	2.47
Barium, Total	1000	50	8	4.94	9.38	6.99	mg/kg	4.94	5.41	8.4	7.22	7.64	9.38	7.05	6.93
Cadmium, Total	70	2	0	ND	ND	ND	mg/kg	0.412	0.415	0.425	0.425	0.422	0.417	0.41	0.425
Chromium, Total	100	30	8	4.10	6.22	5.07	mg/kg	4.1	4.19	5.16	5.09	6.22	6.17	5.23	4.83
Lead, Total	200	100	8	7.21	17.20	11.94	mg/kg	7.21	8.54	17.2	13	13.2	16.1	12.3	11.5
Mercury, Total	20	0.3	1	0.083	0.083	0.083	mg/kg	0.082	0.077	0.084	0.083	0.08	0.081	0.079	0.08
Selenium, Total	400	0.5	0	ND	ND	ND	mg/kg	2.06	2.07	2.13	2.12	2.11	2.08	2.05	2.13
Silver, Total	100	0.6	0	ND	ND	ND	mg/kg	0.412	0.415	0.425	0.425	0.422	0.417	0.41	0.425
Zinc, Total	1000	100	8	9.08	15.80	12.19	mg/kg	9.08	9.68	13.2	12.5	12.4	15.8	14.2	12.1
MCP Volatile Organics by EPA 5035															
1,1,1,2-Tetrachloroethane	0.1		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
1,1,1-Trichloroethane	30		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
1,1,2,2-Tetrachloroethane	0.005		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
1,1,2-Trichloroethane	0.1		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,1-Dichloroethane	0.4		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,1-Dichloroethene	3		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,1-Dichloropropene			0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
1,2,3-Trichlorobenzene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,2,3-Trichloropropane			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,2,4-Trichlorobenzene	2		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,2,4-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,2-Dibromo-3-chloropropane			0	ND	ND	ND	mg/kg	0.0064	0.0033	0.008	0.0038	0.006	0.22	0.0053	0.0053
1,2-Dibromoethane	0.1		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,2-Dichlorobenzene	9		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,2-Dichloroethane	0.1		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,2-Dichloroethene, Total			0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,2-Dichloropropane	0.1		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
1,3,5-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,3-Dichlorobenzene	3		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,3-Dichloropropane			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,3-Dichloropropene, Total	0.01		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
1,4-Dichlorobenzene	0.7		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
1,4-Dioxane	0.2		0	ND	ND	ND	mg/kg	0.17	0.088	0.21	0.1	0.16	5.7	0.14	0.14
2,2-Dichloropropane			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035

SAMPLE ID								LEDGE-1 (GREY)	LEDGE-2 (GREY)	LEDGE-3 (GREY)	LEDGE-4 (GREY)	LEDGE-5 (GREY)	LEDGE-6 (GREY)	LEDGE-7 (GREY)	LEDGE-8 (GREY)
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	8-Jan-20	8-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
2-Hexanone			0	ND	ND	ND	mg/kg	0.021	0.011	0.027	0.013	0.02	0.72	0.018	0.018
Acetone	6		0	ND	ND	ND	mg/kg	0.054	0.028	0.067	0.032	0.05	0.72	0.044	0.044
Benzene	2		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
Bromobenzene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Bromochloromethane			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Bromodichloromethane	0.1		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
Bromoform	0.1		0	ND	ND	ND	mg/kg	0.0086	0.0044	0.011	0.0051	0.008	0.29	0.007	0.0071
Bromomethane	0.5		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Carbon disulfide			0	ND	ND	ND	mg/kg	0.021	0.011	0.027	0.013	0.02	0.72	0.018	0.018
Carbon tetrachloride	10		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Chlorobenzene	1		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
Chloroethane			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Chloroform	0.4		0	ND	ND	ND	mg/kg	0.0032	0.0016	0.004	0.0019	0.003	0.11	0.0026	0.0026
Chloromethane			0	ND	ND	ND	mg/kg	0.0086	0.0044	0.011	0.0051	0.008	0.29	0.007	0.0071
cis-1,2-Dichloroethene	0.3		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
cis-1,3-Dichloropropene	0.01		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
Dibromochloromethane	0.005		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Dibromomethane			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Dichlorodifluoromethane			0	ND	ND	ND	mg/kg	0.021	0.011	0.027	0.013	0.02	0.72	0.018	0.018
Diethyl ether			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Diisopropyl Ether			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Ethyl-Tert-Butyl-Ether			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Ethylbenzene	40		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Hexachlorobutadiene	30		0	ND	ND	ND	mg/kg	0.0086	0.0044	0.011	0.0051	0.008	0.29	0.007	0.0071
Isopropylbenzene			0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Methyl ethyl ketone	4		0	ND	ND	ND	mg/kg	0.021	0.011	0.027	0.013	0.02	0.72	0.018	0.018
Methyl isobutyl ketone	0.4		0	ND	ND	ND	mg/kg	0.021	0.011	0.027	0.013	0.02	0.72	0.018	0.018
Methyl tert butyl ether	0.1		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Methylene chloride	0.1		0	ND	ND	ND	mg/kg	0.011	0.0055	0.013	0.0064	0.01	0.36	0.0088	0.0088
n-Butylbenzene			0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
n-Propylbenzene			0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Naphthalene	4		0	ND	ND	ND	mg/kg	0.0086	0.0044	0.011	0.0051	0.008	0.29	0.007	0.0071
o-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
o-Xylene	400		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
p-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
p-Isopropyltoluene			0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	**0.26**	0.0018	0.0018
p/m-Xylene	400		0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
sec-Butylbenzene			0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Styrene	3		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
tert-Butylbenzene			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Tertiary-Amyl Methyl Ether			0	ND	ND	ND	mg/kg	0.0043	0.0022	0.0054	0.0025	0.004	0.14	0.0035	0.0035
Tetrachloroethene	1		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
Tetrahydrofuran			0	ND	ND	ND	mg/kg	0.0086	0.0044	0.011	0.0051	0.008	0.29	0.007	0.0071
Toluene	30		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
trans-1,2-Dichloroethene	1		0	ND	ND	ND	mg/kg	0.0032	0.0016	0.004	0.0019	0.003	0.11	0.0026	0.0026
trans-1,3-Dichloropropene	0.01		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Trichloroethene	0.3		0	ND	ND	ND	mg/kg	0.0011	0.00055	0.0013	0.00064	0.001	0.036	0.00088	0.00088
Trichlorofluoromethane			0	ND	ND	ND	mg/kg	0.0086	0.0044	0.011	0.0051	0.008	0.29	0.007	0.0071
Vinyl chloride	0.9		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018
Xylenes, Total	400		0	ND	ND	ND	mg/kg	0.0021	0.0011	0.0027	0.0013	0.002	0.072	0.0018	0.0018

SAMPLE ID								LEDGE-1 (GREY)	LEDGE-2 (GREY)	LEDGE-3 (GREY)	LEDGE-4 (GREY)	LEDGE-5 (GREY)	LEDGE-6 (GREY)	LEDGE-7 (GREY)	LEDGE-8 (GREY)
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	8-Jan-20	8-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
MCP PAHs															
2-Methylnaphthalene	**0.7**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.074*	*0.073*	*0.074*	*0.075*	*0.076*	*0.075*	*0.074*	*0.073*
Acenaphthene	**4**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*
Acenaphthylene	**1**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*
Anthracene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Benzo(a)anthracene	**7**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Benzo(a)pyrene	**2**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*
Benzo(b)fluoranthene	**7**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Benzo(ghi)perylene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*
Benzo(k)fluoranthene	**70**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Chrysene	**70**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Dibenzo(a,h)anthracene	**0.7**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.074*	*0.073*	*0.074*	*0.075*	*0.076*	*0.075*	*0.074*	*0.073*
Fluoranthene	**1000**	**4**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Fluorene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.18*	*0.17*	*0.18*	*0.18*	*0.18*	*0.18*	*0.18*	*0.17*
Indeno(1,2,3-cd)pyrene	**7**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*	*0.14*
Naphthalene	**4**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.18*	*0.17*	*0.18*	*0.18*	*0.18*	*0.18*	*0.18*	*0.17*
Phenanthrene	**10**	**3**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Pyrene	**1000**	**4**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.11*	*0.11*	*0.11*	*0.11*	*0.1*
Petroleum Hydrocarbon Quantitation															
TPH (C10-C36)	**1000**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*34.6*	*34.5*	*34.1*	*35*	*35.1*	*35.2*	*34*	*35*

Notes:

Results in Italics were not detected at the detection limit shown.

Results in Bold were detected at the concentration shown.

ND = Not Detected above laboratory limits

Natural Background = Background levels for "natural" soil and for soil containing coal ash and wood ash associated with fill material.

Reportable Concentrations = The concentration of oil or hazardous material in soil or groundwater which requires notification to MassDEP.

Table 1C - Sand Sampling Data - Beach Sand

Siasconset Beach Preservation Fund
Siasconset, Massachusetts

SAMPLE ID								BEACH-1	BEACH-2	BEACH-3	BEACH-4	BEACH-5	BEACH-6	BEACH-7	BEACH-8
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
General Chemistry															
Solids, Total			8	87.2	97.4	94.0	%	97.4	96.6	95.4	97.3	90.3	95.4	92.9	87.2
pH (H)			8	7.0	7.3	7.2	SU	7	7.3	7.1	7.3	7	7.2	7.3	7.3
Nitrogen, Nitrate/Nitrite			2	0.9	1.1	1.0	mg/kg	0.96	0.98	0.89	0.96	1	0.97	0.97	1.1
Nitrogen, Total Kjeldahl			0	ND	ND	ND	mg/kg	120	160	150	150	160	150	100	110
Phosphorus, Total			8	21.0	140.0	56.1	mg/kg	32	34	64	21	140	59	90	90
Phosphate, Total			8	65.0	440.0	172.9	mg/kg	99	100	200	65	440	180	280	280
Microbiological Analysis															
Coliform, Total (MPN)			7	91.4	1588.9	414.9	MPN/gm	91.35	340.37	278.43	<0.2	1588.86	893.92	>=1571.99	>=1590.55
MCP Total Metals															
Arsenic, Total	20	20	8	0.67	2.35	1.35	mg/kg	0.67	1.63	0.974	0.804	2.35	1.26	2	2.18
Barium, Total	1000	50	8	0.42	5.08	1.55	mg/kg	0.654	1.08	1.21	0.418	4.23	1.97	5.08	2.24
Cadmium, Total	70	2	0	ND	ND	ND	mg/kg	0.385	0.405	0.401	0.394	0.431	0.394	0.421	0.451
Chromium, Total	100	30	8	0.44	3.43	1.29	mg/kg	0.435	1.4	0.813	0.654	3.43	1.48	3.17	1.5
Lead, Total	200	100	4	1.92	9.42	3.25	mg/kg	1.92	2.02	2	1.97	6.73	3.35	9.42	3.83
Mercury, Total	20	0.3	0	ND	ND	ND	mg/kg	0.074	0.069	0.075	0.074	0.079	0.074	0.079	0.084
Selenium, Total	400	0.5	0	ND	ND	ND	mg/kg	1.92	2.02	2	1.97	2.15	1.97	2.11	2.25
Silver, Total	100	0.6	0	ND	ND	ND	mg/kg	0.385	0.405	0.401	0.394	0.431	0.394	0.421	0.451
Zinc, Total	1000	100	6	1.92	9.50	3.96	mg/kg	1.92	3.81	2.65	1.97	7.48	4.61	9.5	4.82
MCP Volatile Organics by EPA 5035															
1,1,1,2-Tetrachloroethane	0.1		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
1,1,1-Trichloroethane	30		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
1,1,2,2-Tetrachloroethane	0.005		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
1,1,2-Trichloroethane	0.1		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,1-Dichloroethane	0.4		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,1-Dichloroethene	3		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,1-Dichloropropene			0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
1,2,3-Trichlorobenzene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,2,3-Trichloropropane			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,2,4-Trichlorobenzene	2		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,2,4-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,2-Dibromo-3-chloropropane			0	ND	ND	ND	mg/kg	0.0036	0.0041	0.0028	0.0028	0.005	0.0032	0.0058	0.0051
1,2-Dibromoethane	0.1		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,2-Dichlorobenzene	9		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,2-Dichloroethane	0.1		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,2-Dichloroethene, Total			0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,2-Dichloropropane	0.1		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
1,3,5-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,3-Dichlorobenzene	3		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034

SAMPLE ID								BEACH-1	BEACH-2	BEACH-3	BEACH-4	BEACH-5	BEACH-6	BEACH-7	BEACH-8
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
1,3-Dichloropropane			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,3-Dichloropropene, Total	0.01		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
1,4-Dichlorobenzene	0.7		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
1,4-Dioxane	0.2		0	ND	ND	ND	mg/kg	0.098	0.11	0.075	0.074	0.13	0.086	0.15	0.14
2,2-Dichloropropane			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
2-Hexanone			0	ND	ND	ND	mg/kg	0.012	0.014	0.0094	0.0093	0.016	0.011	0.019	0.017
Acetone	6		0	ND	ND	ND	mg/kg	0.03	0.034	0.023	0.023	0.041	0.027	0.048	0.042
Benzene	2		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
Bromobenzene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Bromochloromethane			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Bromodichloromethane	0.1		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
Bromoform	0.1		0	ND	ND	ND	mg/kg	0.0049	0.0055	0.0038	0.0037	0.0066	0.0043	0.0077	0.0068
Bromomethane	0.5		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Carbon disulfide			0	ND	ND	ND	mg/kg	0.012	0.014	0.0094	0.0093	0.016	0.011	0.019	0.017
Carbon tetrachloride	10		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
Chlorobenzene	1		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
Chloroethane			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Chloroform	0.4		0	ND	ND	ND	mg/kg	0.0018	0.0021	0.0014	0.0014	0.0025	0.0016	0.0029	0.0026
Chloromethane			0	ND	ND	ND	mg/kg	0.0049	0.0055	0.0038	0.0037	0.0066	0.0043	0.0077	0.0068
cis-1,2-Dichloroethene	0.3		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
cis-1,3-Dichloropropene	0.01		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
Dibromochloromethane	0.005		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
Dibromomethane			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Dichlorodifluoromethane			0	ND	ND	ND	mg/kg	0.012	0.014	0.0094	0.0093	0.016	0.011	0.019	0.017
Diethyl ether			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Diisopropyl Ether			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Ethyl-Tert-Butyl-Ether			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Ethylbenzene	40		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
Hexachlorobutadiene	30		0	ND	ND	ND	mg/kg	0.0049	0.0055	0.0038	0.0037	0.0066	0.0043	0.0077	0.0068
Isopropylbenzene			0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
Methyl ethyl ketone	4		0	ND	ND	ND	mg/kg	0.012	0.014	0.0094	0.0093	0.016	0.011	0.019	0.017
Methyl isobutyl ketone	0.4		0	ND	ND	ND	mg/kg	0.012	0.014	0.0094	0.0093	0.016	0.011	0.019	0.017
Methyl tert butyl ether	0.1		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Methylene chloride	0.1		0	ND	ND	ND	mg/kg	0.0061	0.0069	0.0047	0.0046	0.0083	0.0053	0.0096	0.0085
n-Butylbenzene			0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
n-Propylbenzene			0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
Naphthalene	4		0	ND	ND	ND	mg/kg	0.0049	0.0055	0.0038	0.0037	0.0066	0.0043	0.0077	0.0068
o-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
o-Xylene	400		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
p-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
p-Isopropyltoluene			0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
p/m-Xylene	400		0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
sec-Butylbenzene			0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
Styrene	3		0	ND	ND	ND	mg/kg	0.0012	0.0014	0.00094	0.00093	0.0016	0.0011	0.0019	0.0017
tert-Butylbenzene			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Tertiary-Amyl Methyl Ether			0	ND	ND	ND	mg/kg	0.0024	0.0028	0.0019	0.0019	0.0033	0.0021	0.0038	0.0034
Tetrachloroethene	1		0	ND	ND	ND	mg/kg	0.00061	0.00069	0.00047	0.00046	0.00083	0.00053	0.00096	0.00085
Tetrahydrofuran			0	ND	ND	ND	mg/kg	0.0049	0.0055	0.0038	0.0037	0.0066	0.0043	0.0077	0.0068

SAMPLE ID								BEACH-1	BEACH-2	BEACH-3	BEACH-4	BEACH-5	BEACH-6	BEACH-7	BEACH-8
SAMPLING DATE								7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20	7-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
Toluene	**30**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0012*	*0.0014*	*0.00094*	*0.00093*	*0.0016*	*0.0011*	*0.0019*	*0.0017*
trans-1,2-Dichloroethene	**1**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0018*	*0.0021*	*0.0014*	*0.0014*	*0.0025*	*0.0016*	*0.0029*	*0.0026*
trans-1,3-Dichloropropene	**0.01**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0012*	*0.0014*	*0.00094*	*0.00093*	*0.0016*	*0.0011*	*0.0019*	*0.0017*
Trichloroethene	**0.3**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.00061*	*0.00069*	*0.00047*	*0.00046*	*0.00083*	*0.00053*	*0.00096*	*0.00085*
Trichlorofluoromethane			**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0049*	*0.0055*	*0.0038*	*0.0037*	*0.0066*	*0.0043*	*0.0077*	*0.0068*
Vinyl chloride	**0.9**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0012*	*0.0014*	*0.00094*	*0.00093*	*0.0016*	*0.0011*	*0.0019*	*0.0017*
Xylenes, Total	**400**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0012*	*0.0014*	*0.00094*	*0.00093*	*0.0016*	*0.0011*	*0.0019*	*0.0017*
MCP PAHs															
2-Methylnaphthalene	**0.7**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.071*	*0.072*	*0.072*	*0.07*	*0.077*	*0.072*	*0.074*	*0.08*
Acenaphthene	**4**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.13*	*0.15*	*0.14*	*0.14*	*0.15*
Acenaphthylene	**1**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.13*	*0.15*	*0.14*	*0.14*	*0.15*
Anthracene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Benzo(a)anthracene	**7**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Benzo(a)pyrene	**2**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.13*	*0.15*	*0.14*	*0.14*	*0.15*
Benzo(b)fluoranthene	**7**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Benzo(ghi)perylene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.13*	*0.15*	*0.14*	*0.14*	*0.15*
Benzo(k)fluoranthene	**70**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Chrysene	**70**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Dibenzo(a,h)anthracene	**0.7**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.071*	*0.072*	*0.072*	*0.07*	*0.077*	*0.072*	*0.074*	*0.08*
Fluoranthene	**1000**	**4**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Fluorene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.17*	*0.17*	*0.17*	*0.17*	*0.18*	*0.17*	*0.18*	*0.19*
Indeno(1,2,3-cd)pyrene	**7**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.14*	*0.14*	*0.14*	*0.13*	*0.15*	*0.14*	*0.14*	*0.15*
Naphthalene	**4**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.17*	*0.17*	*0.17*	*0.17*	*0.18*	*0.17*	*0.18*	*0.19*
Phenanthrene	**10**	**3**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Pyrene	**1000**	**4**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.1*	*0.1*	*0.1*	*0.1*	*0.11*	*0.1*	*0.11*	*0.11*
Petroleum Hydrocarbon Quantitation															
TPH (C10-C36)	**1000**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*32.2*	*34.3*	*33.2*	*33.3*	*35.2*	*32.8*	*34.9*	*36.9*

Notes:

Results in Italics were not detected at the detection limit shown.

Results in Bold were detected at the concentration shown.

ND = Not Detected above laboratory limits

Natural Background = Background levels for "natural" soil and for soil containing coal ash and wood ash associated with fill material.

Reportable Concentrations = The concentration of oil or hazardous material in soil or groundwater which requires notification to MassDEP.

Table 1D - Sand Sampling Data - Intertidal Sand

Siasconset Beach Preservation Fund
Siasconset, Massachusetts

SAMPLE ID								TIDAL-1	TIDAL-2	TIDAL-3	TIDAL-4	TIDAL-5	TIDAL-6	TIDAL-7	TIDAL-8
SAMPLING DATE								8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
General Chemistry															
Solids, Total			8	80.9	96.9	88.5	%	86.1	82.7	80.9	92.6	96	89.7	96.9	84.7
pH (H)			8	7.4	8.0	7.7	SU	7.4	7.4	7.5	7.5	7.7	7.9	7.9	8
Nitrogen, Nitrate/Nitrite			0	ND	ND	ND	mg/kg	1.1	1.1	1.1	0.91	0.98	1	0.88	1.1
Nitrogen, Total Kjeldahl			2	150.0	1100.0	212.6	mg/kg	170	180	160	160	190	1100	150	170
Phosphorus, Total			6	10.0	110.0	24.7	mg/kg	10	11	12	55	46	110	21	18
Phosphate, Total			6	31.0	330.0	74.9	mg/kg	31	33	35	170	140	330	64	55
Microbiological Analysis															
Coliform, Total (MPN)			3	0.2	0.2	0.2	MPN/gm	<0.2	<0.2	<0.2	0.2	0.2	0.2	<0.2	<0.2
MCP Total Metals															
Arsenic, Total	20	20	6	0.46	1.20	0.62	mg/kg	1.2	0.502	0.467	0.475	0.718	0.823	0.611	0.464
Barium, Total	1000	50	5	0.42	0.80	0.58	mg/kg	0.698	0.469	0.467	0.42	0.595	0.797	0.7	0.598
Cadmium, Total	70	2	0	ND	ND	ND	mg/kg	0.459	0.469	0.467	0.42	0.408	0.44	0.402	0.464
Chromium, Total	100	30	6	0.42	0.89	0.58	mg/kg	0.578	0.469	0.514	0.42	0.673	0.894	0.8	0.464
Lead, Total	200	100	0	ND	ND	ND	mg/kg	2.3	2.35	2.34	2.1	2.04	2.2	2.01	2.32
Mercury, Total	20	0.3	0	ND	ND	ND	mg/kg	0.087	0.089	0.092	0.08	0.077	0.083	0.076	0.088
Selenium, Total	400	0.5	0	ND	ND	ND	mg/kg	2.3	2.35	2.34	2.1	2.04	2.2	2.01	2.32
Silver, Total	100	0.6	0	ND	ND	ND	mg/kg	0.459	0.469	0.467	0.42	0.408	0.44	0.402	0.464
Zinc, Total	1000	100	4	2.10	3.51	2.49	mg/kg	3.51	2.35	2.34	2.1	2.5	2.5	2.49	2.32
MCP Volatile Organics by EPA 5035															
1,1,1,2-Tetrachloroethane	0.1		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
1,1,1-Trichloroethane	30		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
1,1,2,2-Tetrachloroethane	0.005		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
1,1,2-Trichloroethane	0.1		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,1-Dichloroethane	0.4		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,1-Dichloroethene	3		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,1-Dichloropropene			0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
1,2,3-Trichlorobenzene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,2,3-Trichloropropane			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,2,4-Trichlorobenzene	2		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,2,4-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,2-Dibromo-3-chloropropane			0	ND	ND	ND	mg/kg	0.0049	0.0031	0.0029	0.0027	0.0038	0.0046	0.0043	0.0054
1,2-Dibromoethane	0.1		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,2-Dichlorobenzene	9		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,2-Dichloroethane	0.1		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,2-Dichloroethene, Total			0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,2-Dichloropropane	0.1		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
1,3,5-Trimethylbenzene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,3-Dichlorobenzene	3		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036

OHI Engineering, Inc.
Engineers & Environmental Scientists

SAMPLE ID								TIDAL-1	TIDAL-2	TIDAL-3	TIDAL-4	TIDAL-5	TIDAL-6	TIDAL-7	TIDAL-8
SAMPLING DATE								8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
1,3-Dichloropropane			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,3-Dichloropropene, Total	0.01		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
1,4-Dichlorobenzene	0.7		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
1,4-Dioxane	0.2		0	ND	ND	ND	mg/kg	0.13	0.083	0.078	0.071	0.1	0.12	0.12	0.14
2,2-Dichloropropane			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
2-Hexanone			0	ND	ND	ND	mg/kg	0.016	0.01	0.0098	0.0089	0.013	0.015	0.014	0.018
Acetone	6		0	ND	ND	ND	mg/kg	0.041	0.026	0.024	0.022	0.032	0.039	0.036	0.045
Benzene	2		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
Bromobenzene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Bromochloromethane			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Bromodichloromethane	0.1		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
Bromoform	0.1		0	ND	ND	ND	mg/kg	0.0066	0.0041	0.0039	0.0036	0.0051	0.0062	0.0058	0.0072
Bromomethane	0.5		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Carbon disulfide			0	ND	ND	ND	mg/kg	0.016	0.01	0.0098	0.0089	0.013	0.015	0.014	0.018
Carbon tetrachloride	10		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
Chlorobenzene	1		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
Chloroethane			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Chloroform	0.4		0	ND	ND	ND	mg/kg	0.0025	0.0016	0.0015	0.0013	0.0019	0.0023	0.0022	0.0027
Chloromethane			0	ND	ND	ND	mg/kg	0.0066	0.0041	0.0039	0.0036	0.0051	0.0062	0.0058	0.0072
cis-1,2-Dichloroethene	0.3		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
cis-1,3-Dichloropropene	0.01		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
Dibromochloromethane	0.005		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
Dibromomethane			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Dichlorodifluoromethane			0	ND	ND	ND	mg/kg	0.016	0.01	0.0098	0.0089	0.013	0.015	0.014	0.018
Diethyl ether			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Diisopropyl Ether			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Ethyl-Tert-Butyl-Ether			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Ethylbenzene	40		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
Hexachlorobutadiene	30		0	ND	ND	ND	mg/kg	0.0066	0.0041	0.0039	0.0036	0.0051	0.0062	0.0058	0.0072
Isopropylbenzene			0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
Methyl ethyl ketone	4		0	ND	ND	ND	mg/kg	0.016	0.01	0.0098	0.0089	0.013	0.015	0.014	0.018
Methyl isobutyl ketone	0.4		0	ND	ND	ND	mg/kg	0.016	0.01	0.0098	0.0089	0.013	0.015	0.014	0.018
Methyl tert butyl ether	0.1		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Methylene chloride	0.1		0	ND	ND	ND	mg/kg	0.0082	0.0052	0.0049	0.0044	0.0064	0.0077	0.0072	0.009
n-Butylbenzene			0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
n-Propylbenzene			0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
Naphthalene	4		0	ND	ND	ND	mg/kg	0.0066	0.0041	0.0039	0.0036	0.0051	0.0062	0.0058	0.0072
o-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
o-Xylene	400		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
p-Chlorotoluene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
p-Isopropyltoluene			0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
p/m-Xylene	400		0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
sec-Butylbenzene			0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
Styrene	3		0	ND	ND	ND	mg/kg	0.0016	0.001	0.00098	0.00089	0.0013	0.0015	0.0014	0.0018
tert-Butylbenzene			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Tertiary-Amyl Methyl Ether			0	ND	ND	ND	mg/kg	0.0033	0.0021	0.002	0.0018	0.0026	0.0031	0.0029	0.0036
Tetrachloroethene	1		0	ND	ND	ND	mg/kg	0.00082	0.00052	0.00049	0.00044	0.00064	0.00077	0.00072	0.0009
Tetrahydrofuran			0	ND	ND	ND	mg/kg	0.0066	0.0041	0.0039	0.0036	0.0051	0.0062	0.0058	0.0072

SAMPLE ID								TIDAL-1	TIDAL-2	TIDAL-3	TIDAL-4	TIDAL-5	TIDAL-6	TIDAL-7	TIDAL-8
SAMPLING DATE								8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20	8-Jan-20
	MA Standards														
	Reportable Concentrations	Natural Background	Freq	Min	Max	Mean	Units								
Toluene	**30**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0016*	*0.001*	*0.00098*	*0.00089*	*0.0013*	*0.0015*	*0.0014*	*0.0018*
trans-1,2-Dichloroethene	**1**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0025*	*0.0016*	*0.0015*	*0.0013*	*0.0019*	*0.0023*	*0.0022*	*0.0027*
trans-1,3-Dichloropropene	**0.01**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0016*	*0.001*	*0.00098*	*0.00089*	*0.0013*	*0.0015*	*0.0014*	*0.0018*
Trichloroethene	**0.3**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.00082*	*0.00052*	*0.00049*	*0.00044*	*0.00064*	*0.00077*	*0.00072*	*0.0009*
Trichlorofluoromethane			**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0066*	*0.0041*	*0.0039*	*0.0036*	*0.0051*	*0.0062*	*0.0058*	*0.0072*
Vinyl chloride	**0.9**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0016*	*0.001*	*0.00098*	*0.00089*	*0.0013*	*0.0015*	*0.0014*	*0.0018*
Xylenes, Total	**400**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.0016*	*0.001*	*0.00098*	*0.00089*	*0.0013*	*0.0015*	*0.0014*	*0.0018*
MCP PAHs															
2-Methylnaphthalene	**0.7**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.079*	*0.083*	*0.086*	*0.075*	*0.071*	*0.076*	*0.07*	*0.08*
Acenaphthene	**4**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.15*	*0.16*	*0.16*	*0.14*	*0.13*	*0.14*	*0.13*	*0.15*
Acenaphthylene	**1**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.15*	*0.16*	*0.16*	*0.14*	*0.13*	*0.14*	*0.13*	*0.15*
Anthracene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Benzo(a)anthracene	**7**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Benzo(a)pyrene	**2**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.15*	*0.16*	*0.16*	*0.14*	*0.13*	*0.14*	*0.13*	*0.15*
Benzo(b)fluoranthene	**7**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Benzo(ghi)perylene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.15*	*0.16*	*0.16*	*0.14*	*0.13*	*0.14*	*0.13*	*0.15*
Benzo(k)fluoranthene	**70**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Chrysene	**70**	**2**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Dibenzo(a,h)anthracene	**0.7**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.079*	*0.083*	*0.086*	*0.075*	*0.071*	*0.076*	*0.07*	*0.08*
Fluoranthene	**1000**	**4**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Fluorene	**1000**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.19*	*0.2*	*0.2*	*0.18*	*0.17*	*0.18*	*0.17*	*0.19*
Indeno(1,2,3-cd)pyrene	**7**	**1**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.15*	*0.16*	*0.16*	*0.14*	*0.13*	*0.14*	*0.13*	*0.15*
Naphthalene	**4**	**0.5**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.19*	*0.2*	*0.2*	*0.18*	*0.17*	*0.18*	*0.17*	*0.19*
Phenanthrene	**10**	**3**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Pyrene	**1000**	**4**	**0**	*ND*	*ND*	*ND*	**mg/kg**	*0.11*	*0.12*	*0.12*	*0.11*	*0.1*	*0.11*	*0.1*	*0.11*
Petroleum Hydrocarbon Quantitation															
TPH (C10-C36)	**1000**		**0**	*ND*	*ND*	*ND*	**mg/kg**	*38.5*	*38.5*	*39.7*	*34.9*	*34.2*	*35.3*	*34.2*	*37.6*

Notes:

Results in Italics were not detected at the detection limit shown.

Results in Bold were detected at the concentration shown.

ND = Not Detected above laboratory limits

Natural Background = Background levels for "natural" soil and for soil containing coal ash and wood ash associated with fill material.

Reportable Concentrations = The concentration of oil or hazardous material in soil or groundwater which requires notification to MassDEP.

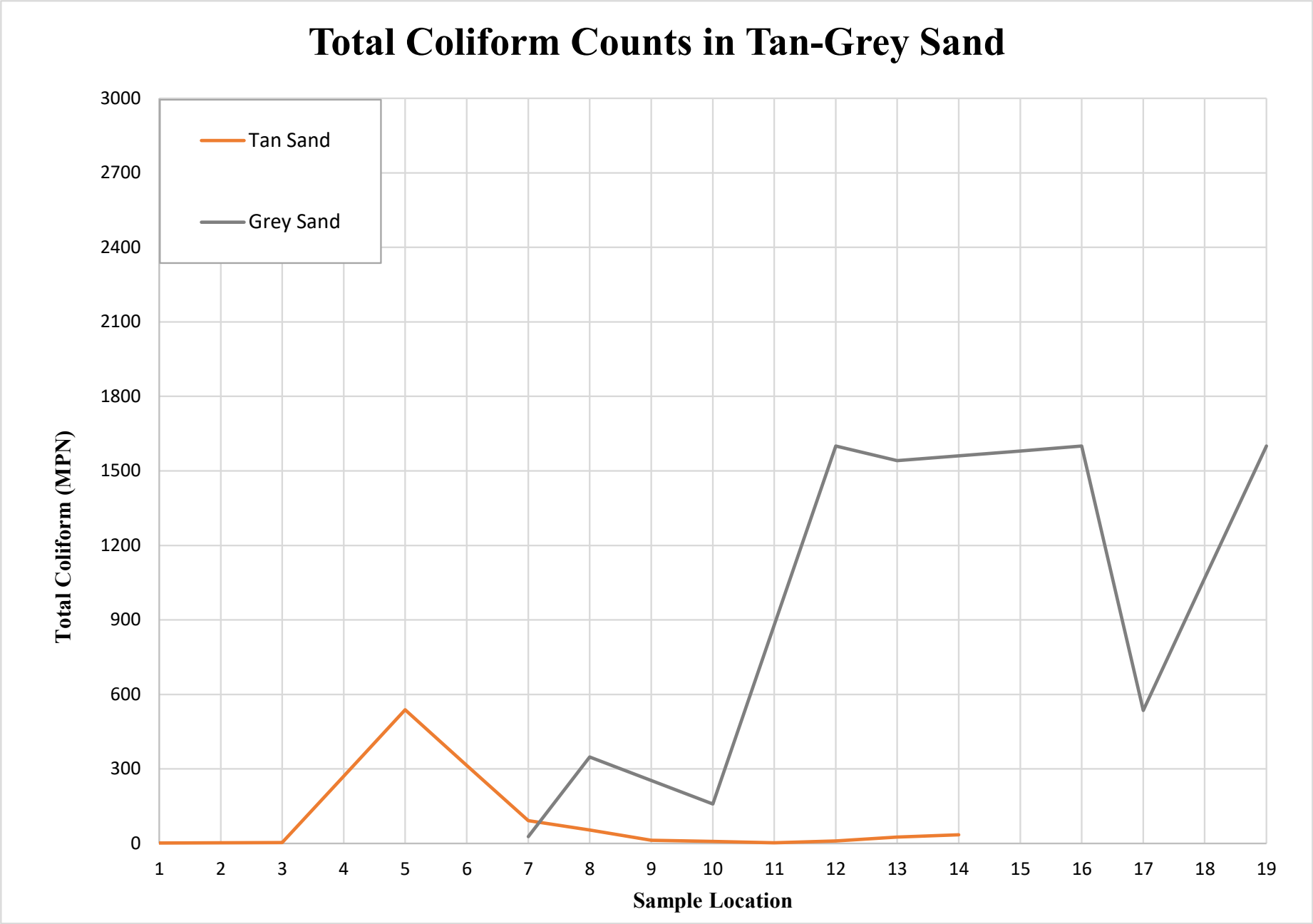
Table 1E - Sand Sampling Data - Frequency of Detection and Statistics

Siasconset Beach Preservation Fund
Siasconset, Massachusetts

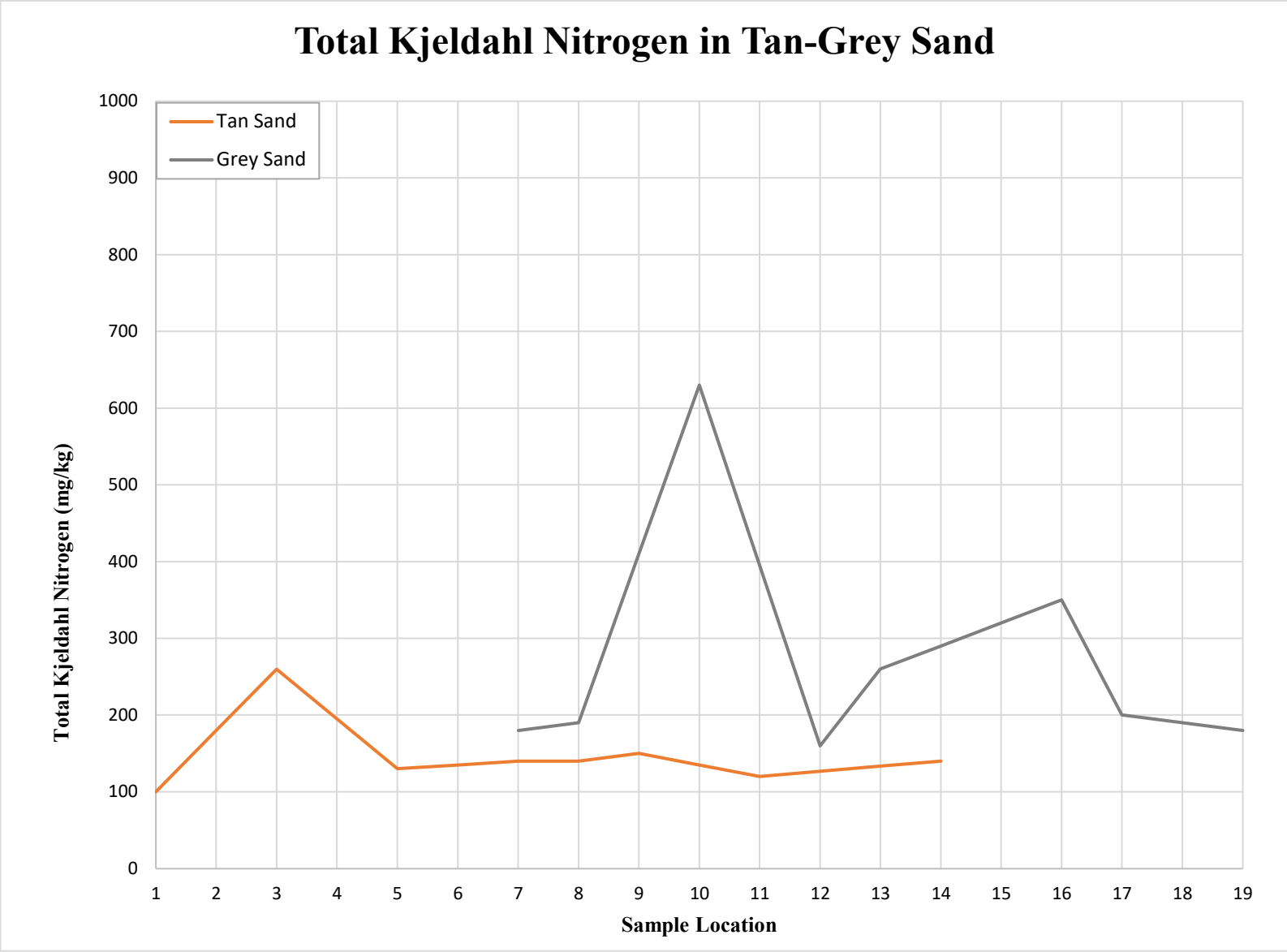
SAMPLE ID	MA Standards			LEDGE (TAN)				LEDGE (GREY)				BEACH				TIDAL			
	Reportable Concentrations	Natural Background	Units	Freq	Min	Max	Mean	Freq	Min	Max	Mean	Freq	Min	Max	Mean	Freq	Min	Max	Mean
General Chemistry																			
Solids, Total			**%**	8 of 8	**92.2**	**95.2**	**93.9**	8 of 8	**91.0**	**94.0**	**92.6**	8 of 8	**87.2**	**97.4**	**94.0**	8 of 8	**80.9**	**96.9**	**88.5**
pH (H)			**SU**	8 of 8	**6.8**	**7.4**	**7.0**	8 of 8	**6.9**	**7.5**	**7.2**	8 of 8	**7.0**	**7.3**	**7.2**	8 of 8	**7.4**	**8.0**	**7.7**
Nitrogen, Nitrate/Nitrite			**mg/kg**	3 of 8	**0.9**	**1.5**	**1.1**	4 of 8	**1.0**	**2.0**	**1.3**	2 of 8	**0.9**	**1.1**	**1.0**	0 of 8	*ND*	*ND*	*ND*
Nitrogen, Total Kjeldahl			**mg/kg**	4 of 8	**100.0**	**260.0**	**142.2**	8 of 8	**160.0**	**630.0**	**240.8**	0 of 8	*ND*	*ND*	*ND*	2 of 8	**150.0**	**1100.0**	**212.6**
Phosphorus, Total			**mg/kg**	8 of 8	**81.0**	**150.0**	**119.1**	8 of 8	**170.0**	**340.0**	**229.2**	8 of 8	**21.0**	**140.0**	**56.1**	6 of 8	**10.0**	**110.0**	**24.7**
Phosphate, Total			**mg/kg**	8 of 8	**250.0**	**480.0**	**368.7**	8 of 8	**510.0**	**1000.0**	**702.4**	8 of 8	**65.0**	**440.0**	**172.9**	6 of 8	**31.0**	**330.0**	**74.9**
Microbiological Analysis																			
Coliform, Total (MPN)			**MPN/gm**	8 of 8	**1.7**	**538.0**	**18.6**	8 of 8	**27.9**	**1540.7**	**263.4**	7 of 8	**91.4**	**1588.9**	**414.9**	3 of 8	**0.2**	**0.2**	**0.2**
MCP Total Metals																			
Arsenic, Total	**20**	**20**	**mg/kg**	8 of 8	**1.51**	**2.43**	**2.01**	8 of 8	**2.34**	**3.19**	**2.76**	8 of 8	**0.67**	**2.35**	**1.35**	6 of 8	**0.46**	**1.20**	**0.62**
Barium, Total	**1000**	**50**	**mg/kg**	8 of 8	**2.93**	**8.96**	**4.39**	8 of 8	**4.94**	**9.38**	**6.99**	8 of 8	**0.42**	**5.08**	**1.55**	5 of 8	**0.42**	**0.80**	**0.58**
Cadmium, Total	**70**	**2**	**mg/kg**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*
Chromium, Total	**100**	**30**	**mg/kg**	8 of 8	**2.62**	**3.79**	**3.28**	8 of 8	**4.10**	**6.22**	**5.07**	8 of 8	**0.44**	**3.43**	**1.29**	6 of 8	**0.42**	**0.89**	**0.58**
Lead, Total	**200**	**100**	**mg/kg**	8 of 8	**2.46**	**5.02**	**3.85**	8 of 8	**7.21**	**17.20**	**11.94**	4 of 8	**1.92**	**9.42**	**3.25**	0 of 8	*ND*	*ND*	*ND*
Mercury, Total	**20**	**0.3**	**mg/kg**	0 of 8	*ND*	*ND*	*ND*	1 of 8	**0.083**	**0.083**	**0.083**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*
Selenium, Total	**400**	**0.5**	**mg/kg**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*
Silver, Total	**100**	**0.6**	**mg/kg**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*
Zinc, Total	**1000**	**100**	**mg/kg**	8 of 8	**4.87**	**9.01**	**7.24**	8 of 8	**9.08**	**15.80**	**12.19**	6 of 8	**1.92**	**9.50**	**3.96**	4 of 8	**2.10**	**3.51**	**2.49**
MCP Volatile Organics by EPA 5035																			
VOCs, Total			**mg/kg**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*
MCP PAHs																			
PAHs, Total			**mg/kg**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*
Petroleum Hydrocarbon Quantitation																			
TPH (C10-C36)	**1000**		**mg/kg**	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*	0 of 8	*ND*	*ND*	*ND*

Notes:
Results in Italics were not detected at the detection limit shown.
Results in Bold were detected at the concentration shown.
ND = Not Detected above laboratory limits
Natural Background = Background levels for "natural" soil and for soil containing coal ash and wood ash associated with fill material.
Reportable Concentrations = The concentration of oil or hazardous material in soil or groundwater which requires notification to MassDEP.

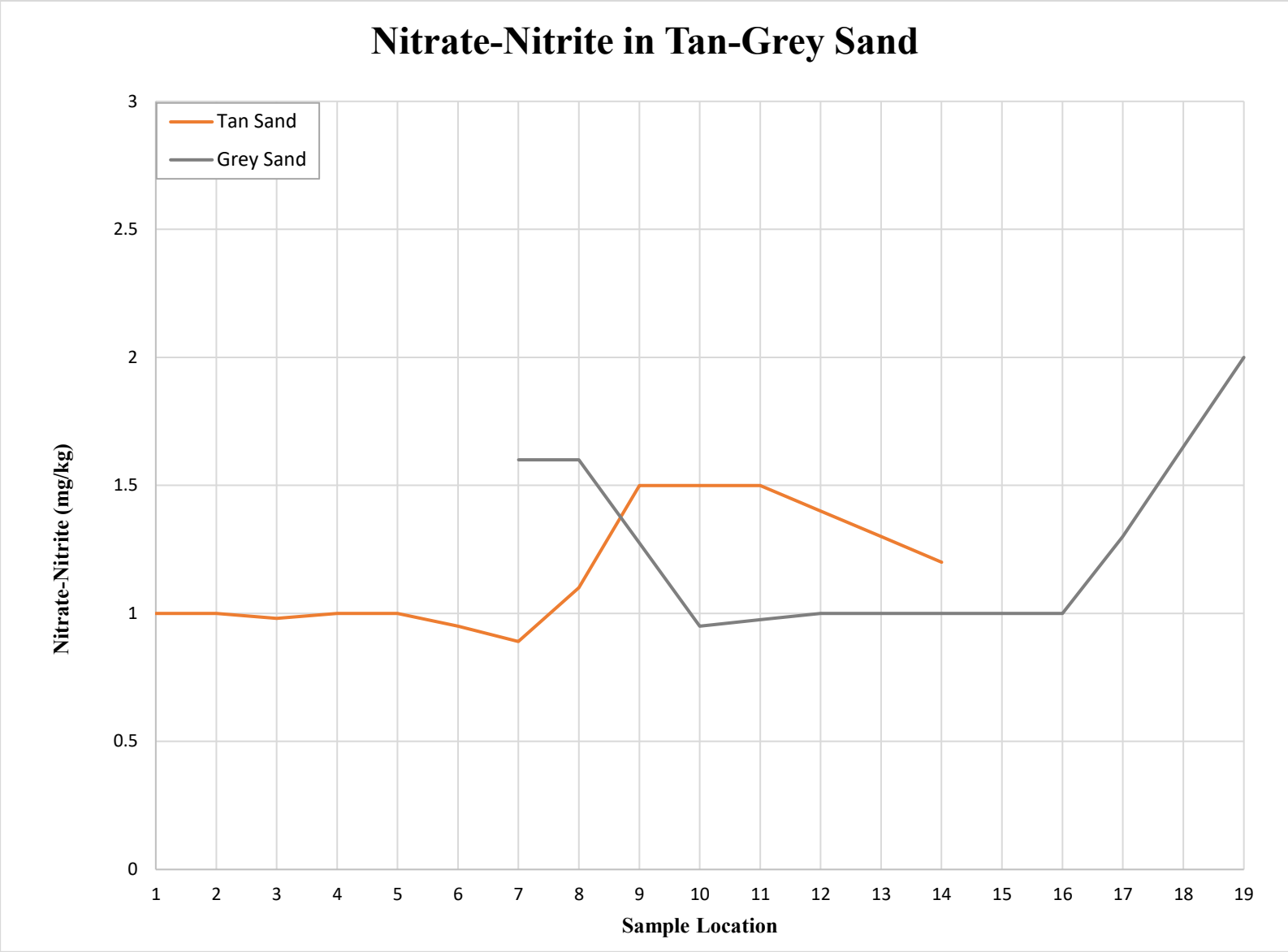
OHI Engineering, Inc.
Engineers & Environmental Scientists



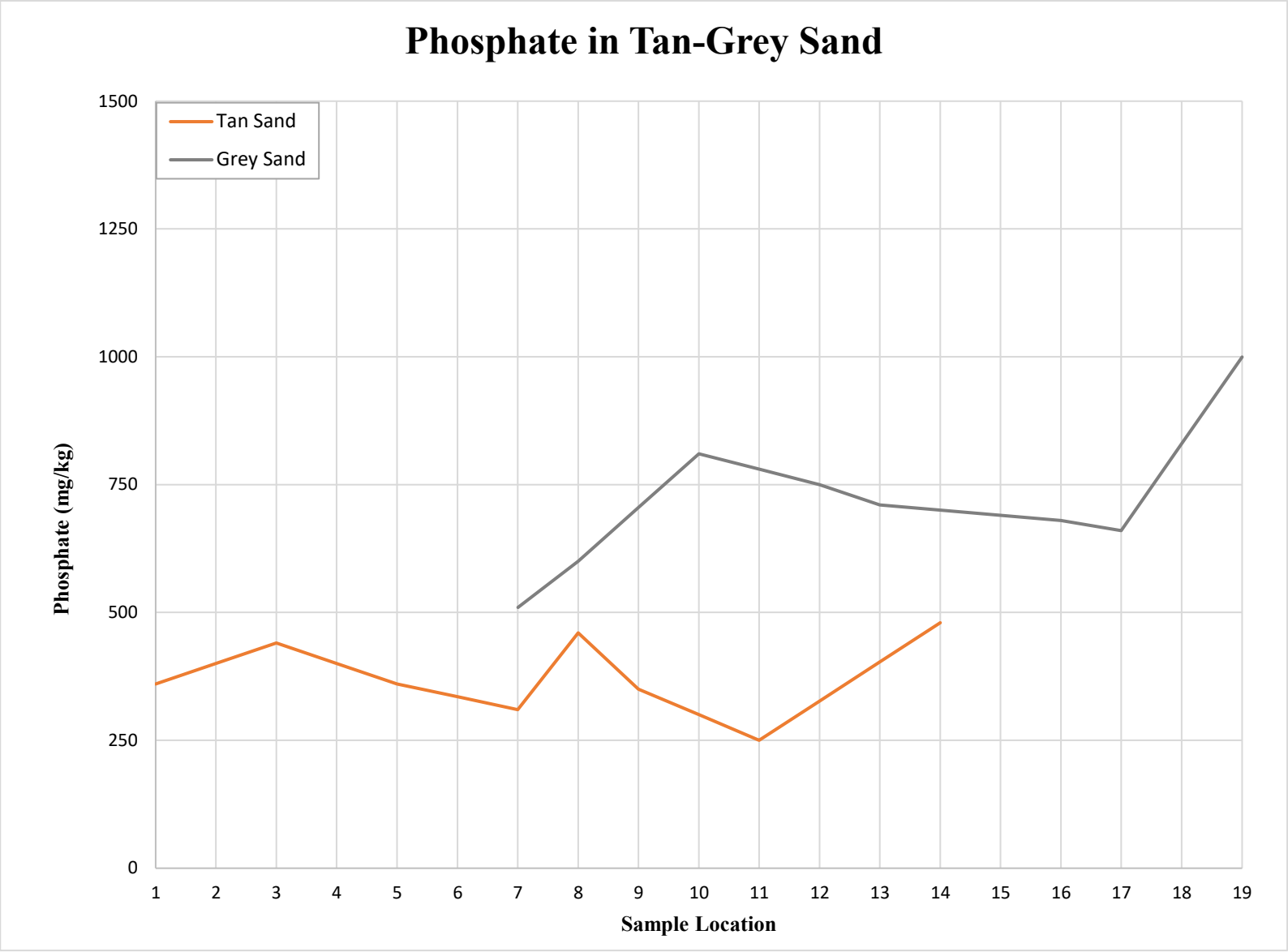
OHI Engineering, Inc.
Engineers & Environmental Scientists



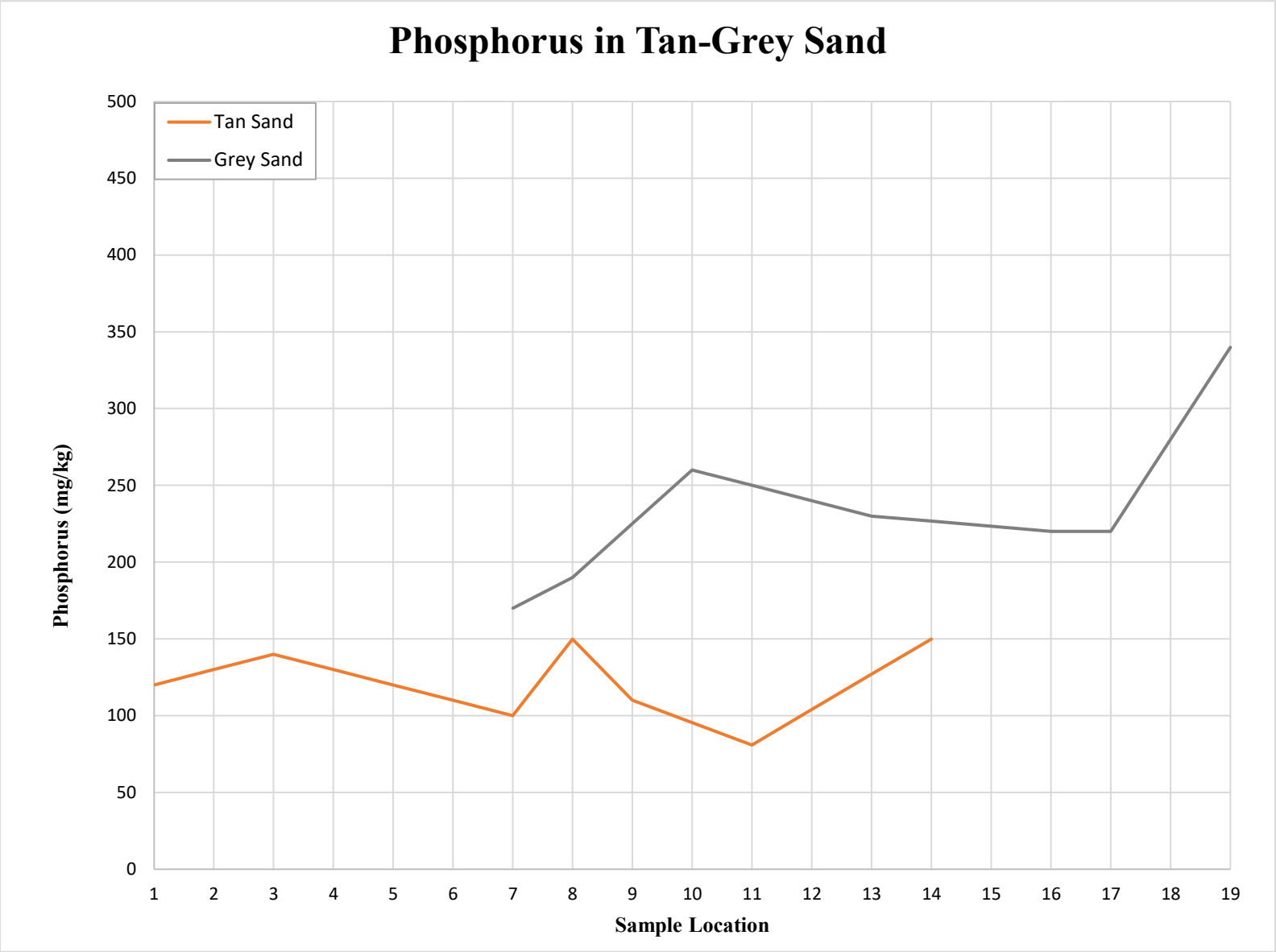
OHI Engineering, Inc.
Engineers & Environmental Scientists



OHI Engineering, Inc.
Engineers & Environmental Scientists



OHI Engineering, Inc.
Engineers & Environmental Scientists



OHI Engineering, Inc.
Engineers & Environmental Scientists

OHI Engineering, Inc.
Engineers & Environmental Scientists

APPENDIX A

Laboratory Reports

ANALYTICAL REPORT

Lab Number:	L2000719
Client:	OHI Engineering Incorporated 44 Wood Avenue Mansfield, MA 02048
ATTN:	James Borrebach
Phone:	(508) 339-3929
Project Name:	EPSILON ASSOC SAND SAMP.
Project Number:	19-2000
Report Date:	01/15/20

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: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2000719-01	LEDGE-1 (TAN)	SOIL	NANTUCKET, MA	01/07/20 07:20	01/08/20
L2000719-02	LEDGE-2 (TAN)	SOIL	NANTUCKET, MA	01/07/20 07:40	01/08/20
L2000719-03	LEDGE-3 (TAN)	SOIL	NANTUCKET, MA	01/07/20 08:00	01/08/20
L2000719-04	LEDGE-4 (TAN)	SOIL	NANTUCKET, MA	01/07/20 08:30	01/08/20
L2000719-05	LEDGE-5 (TAN)	SOIL	NANTUCKET, MA	01/07/20 09:00	01/08/20
L2000719-06	LEDGE-6 (TAN)	SOIL	NANTUCKET, MA	01/07/20 09:20	01/08/20
L2000719-07	LEDGE-7 (TAN)	SOIL	NANTUCKET, MA	01/07/20 09:40	01/08/20
L2000719-08	LEDGE-1 (GREY)	SOIL	NANTUCKET, MA	01/07/20 10:00	01/08/20
L2000719-09	LEDGE-2 (GREY)	SOIL	NANTUCKET, MA	01/07/20 10:15	01/08/20
L2000719-10	LEDGE-3 (GREY)	SOIL	NANTUCKET, MA	01/07/20 10:30	01/08/20
L2000719-11	LEDGE-4 (GREY)	SOIL	NANTUCKET, MA	01/07/20 10:45	01/08/20
L2000719-12	LEDGE-5 (GREY)	SOIL	NANTUCKET, MA	01/07/20 13:00	01/08/20

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

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:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Volatile Organics

The initial calibration, associated with L2000719-09 through -12, utilized a quadratic fit for acetone.

In reference to question H:

The initial calibration, associated with L2000719-01 through -08, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0033), as well as the average response factor for 1,4-dioxane.

The initial calibration, associated with L2000719-09 through -12, did not meet the method required minimum response factor on the lowest calibration standard for trichloroethene (0.1984), 4-methyl-2-pentanone (0.0898), and 1,4-dioxane (0.0017), as well as the average response factor for trichloroethene and 1,4-dioxane.

The continuing calibration standards, associated with L2000719-01 through -12, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

PAHs

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Project Name:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

Case Narrative (continued)

Non-MCP Related Narratives

Coliform, Total (MPN)

L2000719-11: The result is estimated due to the elevated concentration in the sample. Due to the expiration of the method required holding time, re-analysis could not be performed.

Nitrogen, Total Kjeldahl

The WG1328586-3 Laboratory Duplicate RPD for nitrogen, total kjeldahl (47%), performed on L2000719-08, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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: 01/15/20

QC OUTLIER SUMMARY REPORT

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics by EPA 5035 Low - Westborough Lab								
8260C	Batch QC	WG1328935-4	1,1-Dichloroethene	LCSD	28	20	01-07	non-directional bias
8260C	Batch QC	WG1328935-4	Carbon disulfide	LCSD	29	20	01-07	non-directional bias
8260C	Batch QC	WG1329096-3	Chloromethane	LCS	62	70-130	09-12	potential low bias
8260C	Batch QC	WG1329096-3	Acetone	LCS	65	70-130	09-12	potential low bias
8260C	Batch QC	WG1329096-4	Chloromethane	LCSD	65	70-130	09-12	potential low bias
8260C	Batch QC	WG1329096-4	Acetone	LCSD	60	70-130	09-12	potential low bias
8260C	Batch QC	WG1329461-3	1,1-Dichloroethene	LCS	134	70-130	08	potential high bias
General Chemistry - Westborough Lab								
4500NH3-H	Batch QC (L2000719-08)	WG1328586-3	Nitrogen, Total Kjeldahl	Duplicate	47	26	08-12	non-directional bias

ORGANICS

VOLATILES

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01
Client ID: LEDGE-1 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 18:24
Analyst: MKS
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.7	--	1
1,1-Dichloroethane	ND		ug/kg	0.73	--	1
Chloroform	ND		ug/kg	1.1	--	1
Carbon tetrachloride	ND		ug/kg	0.73	--	1
1,2-Dichloropropane	ND		ug/kg	0.73	--	1
Dibromochloromethane	ND		ug/kg	0.73	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.73	--	1
Tetrachloroethene	ND		ug/kg	0.37	--	1
Chlorobenzene	ND		ug/kg	0.37	--	1
Trichlorofluoromethane	ND		ug/kg	2.9	--	1
1,2-Dichloroethane	ND		ug/kg	0.73	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.37	--	1
Bromodichloromethane	ND		ug/kg	0.37	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.73	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.37	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.37	--	1
1,1-Dichloropropene	ND		ug/kg	0.37	--	1
Bromoform	ND		ug/kg	2.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.37	--	1
Benzene	ND		ug/kg	0.37	--	1
Toluene	ND		ug/kg	0.73	--	1
Ethylbenzene	ND		ug/kg	0.73	--	1
Chloromethane	ND		ug/kg	2.9	--	1
Bromomethane	ND		ug/kg	1.5	--	1
Vinyl chloride	ND		ug/kg	0.73	--	1
Chloroethane	ND		ug/kg	1.5	--	1
1,1-Dichloroethene	ND		ug/kg	0.73	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01 Date Collected: 01/07/20 07:20

Client ID: LEDGE-1 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.37	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.5	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	0.73	--	1
Xylenes, Total	ND		ug/kg	0.73	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.73	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.73	--	1
Dibromomethane	ND		ug/kg	1.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.5	--	1
Styrene	ND		ug/kg	0.73	--	1
Dichlorodifluoromethane	ND		ug/kg	7.3	--	1
Acetone	ND		ug/kg	18	--	1
Carbon disulfide	ND		ug/kg	7.3	--	1
Methyl ethyl ketone	ND		ug/kg	7.3	--	1
Methyl isobutyl ketone	ND		ug/kg	7.3	--	1
2-Hexanone	ND		ug/kg	7.3	--	1
Bromochloromethane	ND		ug/kg	1.5	--	1
Tetrahydrofuran	ND		ug/kg	2.9	--	1
2,2-Dichloropropane	ND		ug/kg	1.5	--	1
1,2-Dibromoethane	ND		ug/kg	0.73	--	1
1,3-Dichloropropane	ND		ug/kg	1.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.37	--	1
Bromobenzene	ND		ug/kg	1.5	--	1
n-Butylbenzene	ND		ug/kg	0.73	--	1
sec-Butylbenzene	ND		ug/kg	0.73	--	1
tert-Butylbenzene	ND		ug/kg	1.5	--	1
o-Chlorotoluene	ND		ug/kg	1.5	--	1
p-Chlorotoluene	ND		ug/kg	1.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.2	--	1
Hexachlorobutadiene	ND		ug/kg	2.9	--	1
Isopropylbenzene	ND		ug/kg	0.73	--	1
p-Isopropyltoluene	ND		ug/kg	0.73	--	1
Naphthalene	ND		ug/kg	2.9	--	1
n-Propylbenzene	ND		ug/kg	0.73	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01 Date Collected: 01/07/20 07:20

Client ID: LEDGE-1 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.5	--	1
Diethyl ether	ND		ug/kg	1.5	--	1
Diisopropyl Ether	ND		ug/kg	1.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.5	--	1
1,4-Dioxane	ND		ug/kg	59	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	102		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02
Client ID: LEDGE-2 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 18:52
Analyst: MKS
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.7	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.7	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	1.1	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.57	--	1
Chlorobenzene	ND		ug/kg	0.57	--	1
Trichlorofluoromethane	ND		ug/kg	4.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.57	--	1
Bromodichloromethane	ND		ug/kg	0.57	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.57	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.57	--	1
1,1-Dichloropropene	ND		ug/kg	0.57	--	1
Bromoform	ND		ug/kg	4.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.57	--	1
Benzene	ND		ug/kg	0.57	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.6	--	1
Bromomethane	ND		ug/kg	2.3	--	1
Vinyl chloride	ND		ug/kg	1.1	--	1
Chloroethane	ND		ug/kg	2.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02 Date Collected: 01/07/20 07:40

Client ID: LEDGE-2 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.57	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	--	1
Methyl tert butyl ether	ND		ug/kg	2.3	--	1
p/m-Xylene	ND		ug/kg	2.3	--	1
o-Xylene	ND		ug/kg	1.1	--	1
Xylenes, Total	ND		ug/kg	1.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	2.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.3	--	1
Styrene	ND		ug/kg	1.1	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	29	--	1
Carbon disulfide	ND		ug/kg	11	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	2.3	--	1
Tetrahydrofuran	ND		ug/kg	4.6	--	1
2,2-Dichloropropane	ND		ug/kg	2.3	--	1
1,2-Dibromoethane	ND		ug/kg	1.1	--	1
1,3-Dichloropropane	ND		ug/kg	2.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.57	--	1
Bromobenzene	ND		ug/kg	2.3	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	2.3	--	1
o-Chlorotoluene	ND		ug/kg	2.3	--	1
p-Chlorotoluene	ND		ug/kg	2.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.4	--	1
Hexachlorobutadiene	ND		ug/kg	4.6	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.6	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02 Date Collected: 01/07/20 07:40

Client ID: LEDGE-2 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	--	1
Diethyl ether	ND		ug/kg	2.3	--	1
Diisopropyl Ether	ND		ug/kg	2.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.3	--	1
1,4-Dioxane	ND		ug/kg	92	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03
Client ID: LEDGE-3 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 19:19
Analyst: MKS
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.7	--	1
1,1-Dichloroethane	ND		ug/kg	1.3	--	1
Chloroform	ND		ug/kg	2.0	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	1.3	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	--	1
Tetrachloroethene	ND		ug/kg	0.67	--	1
Chlorobenzene	ND		ug/kg	0.67	--	1
Trichlorofluoromethane	ND		ug/kg	5.3	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.67	--	1
Bromodichloromethane	ND		ug/kg	0.67	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.67	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.67	--	1
1,1-Dichloropropene	ND		ug/kg	0.67	--	1
Bromoform	ND		ug/kg	5.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.67	--	1
Benzene	ND		ug/kg	0.67	--	1
Toluene	ND		ug/kg	1.3	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.3	--	1
Bromomethane	ND		ug/kg	2.7	--	1
Vinyl chloride	ND		ug/kg	1.3	--	1
Chloroethane	ND		ug/kg	2.7	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03 Date Collected: 01/07/20 08:00

Client ID: LEDGE-3 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.67	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.7	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.7	--	1
Methyl tert butyl ether	ND		ug/kg	2.7	--	1
p/m-Xylene	ND		ug/kg	2.7	--	1
o-Xylene	ND		ug/kg	1.3	--	1
Xylenes, Total	ND		ug/kg	1.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	2.7	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.7	--	1
Styrene	ND		ug/kg	1.3	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	33	--	1
Carbon disulfide	ND		ug/kg	13	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	2.7	--	1
Tetrahydrofuran	ND		ug/kg	5.3	--	1
2,2-Dichloropropane	ND		ug/kg	2.7	--	1
1,2-Dibromoethane	ND		ug/kg	1.3	--	1
1,3-Dichloropropane	ND		ug/kg	2.7	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.67	--	1
Bromobenzene	ND		ug/kg	2.7	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	2.7	--	1
o-Chlorotoluene	ND		ug/kg	2.7	--	1
p-Chlorotoluene	ND		ug/kg	2.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--	1
Hexachlorobutadiene	ND		ug/kg	5.3	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.3	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03 Date Collected: 01/07/20 08:00

Client ID: LEDGE-3 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.7	--	1
Diethyl ether	ND		ug/kg	2.7	--	1
Diisopropyl Ether	ND		ug/kg	2.7	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.7	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.7	--	1
1,4-Dioxane	ND		ug/kg	110	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04
Client ID: LEDGE-4 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 19:47
Analyst: MKS
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.8	--	1
1,1-Dichloroethane	ND		ug/kg	1.2	--	1
Chloroform	ND		ug/kg	1.7	--	1
Carbon tetrachloride	ND		ug/kg	1.2	--	1
1,2-Dichloropropane	ND		ug/kg	1.2	--	1
Dibromochloromethane	ND		ug/kg	1.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	--	1
Tetrachloroethene	ND		ug/kg	0.58	--	1
Chlorobenzene	ND		ug/kg	0.58	--	1
Trichlorofluoromethane	ND		ug/kg	4.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.58	--	1
Bromodichloromethane	ND		ug/kg	0.58	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.58	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.58	--	1
1,1-Dichloropropene	ND		ug/kg	0.58	--	1
Bromoform	ND		ug/kg	4.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.58	--	1
Benzene	ND		ug/kg	0.58	--	1
Toluene	ND		ug/kg	1.2	--	1
Ethylbenzene	ND		ug/kg	1.2	--	1
Chloromethane	ND		ug/kg	4.6	--	1
Bromomethane	ND		ug/kg	2.3	--	1
Vinyl chloride	ND		ug/kg	1.2	--	1
Chloroethane	ND		ug/kg	2.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04 Date Collected: 01/07/20 08:30

Client ID: LEDGE-4 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.58	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	--	1
Methyl tert butyl ether	ND		ug/kg	2.3	--	1
p/m-Xylene	ND		ug/kg	2.3	--	1
o-Xylene	ND		ug/kg	1.2	--	1
Xylenes, Total	ND		ug/kg	1.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	--	1
Dibromomethane	ND		ug/kg	2.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.3	--	1
Styrene	ND		ug/kg	1.2	--	1
Dichlorodifluoromethane	ND		ug/kg	12	--	1
Acetone	ND		ug/kg	29	--	1
Carbon disulfide	ND		ug/kg	12	--	1
Methyl ethyl ketone	ND		ug/kg	12	--	1
Methyl isobutyl ketone	ND		ug/kg	12	--	1
2-Hexanone	ND		ug/kg	12	--	1
Bromochloromethane	ND		ug/kg	2.3	--	1
Tetrahydrofuran	ND		ug/kg	4.6	--	1
2,2-Dichloropropane	ND		ug/kg	2.3	--	1
1,2-Dibromoethane	ND		ug/kg	1.2	--	1
1,3-Dichloropropane	ND		ug/kg	2.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.58	--	1
Bromobenzene	ND		ug/kg	2.3	--	1
n-Butylbenzene	ND		ug/kg	1.2	--	1
sec-Butylbenzene	ND		ug/kg	1.2	--	1
tert-Butylbenzene	ND		ug/kg	2.3	--	1
o-Chlorotoluene	ND		ug/kg	2.3	--	1
p-Chlorotoluene	ND		ug/kg	2.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	--	1
Hexachlorobutadiene	ND		ug/kg	4.6	--	1
Isopropylbenzene	ND		ug/kg	1.2	--	1
p-Isopropyltoluene	ND		ug/kg	1.2	--	1
Naphthalene	ND		ug/kg	4.6	--	1
n-Propylbenzene	ND		ug/kg	1.2	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04 Date Collected: 01/07/20 08:30

Client ID: LEDGE-4 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	--	1
Diethyl ether	ND		ug/kg	2.3	--	1
Diisopropyl Ether	ND		ug/kg	2.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.3	--	1
1,4-Dioxane	ND		ug/kg	92	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05
Client ID: LEDGE-5 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 20:15
Analyst: MKS
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	11	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	3.4	--	1
Carbon tetrachloride	ND		ug/kg	2.2	--	1
1,2-Dichloropropane	ND		ug/kg	2.2	--	1
Dibromochloromethane	ND		ug/kg	2.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.1	--	1
Chlorobenzene	ND		ug/kg	1.1	--	1
Trichlorofluoromethane	ND		ug/kg	9.0	--	1
1,2-Dichloroethane	ND		ug/kg	2.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.1	--	1
Bromodichloromethane	ND		ug/kg	1.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.1	--	1
1,1-Dichloropropene	ND		ug/kg	1.1	--	1
Bromoform	ND		ug/kg	9.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Benzene	ND		ug/kg	1.1	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	2.2	--	1
Chloromethane	ND		ug/kg	9.0	--	1
Bromomethane	ND		ug/kg	4.5	--	1
Vinyl chloride	ND		ug/kg	2.2	--	1
Chloroethane	ND		ug/kg	4.5	--	1
1,1-Dichloroethene	ND		ug/kg	2.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.4	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05 Date Collected: 01/07/20 09:00

Client ID: LEDGE-5 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	4.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.5	--	1
Methyl tert butyl ether	ND		ug/kg	4.5	--	1
p/m-Xylene	ND		ug/kg	4.5	--	1
o-Xylene	ND		ug/kg	2.2	--	1
Xylenes, Total	ND		ug/kg	2.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.2	--	1
Dibromomethane	ND		ug/kg	4.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.5	--	1
Styrene	ND		ug/kg	2.2	--	1
Dichlorodifluoromethane	ND		ug/kg	22	--	1
Acetone	ND		ug/kg	56	--	1
Carbon disulfide	ND		ug/kg	22	--	1
Methyl ethyl ketone	ND		ug/kg	22	--	1
Methyl isobutyl ketone	ND		ug/kg	22	--	1
2-Hexanone	ND		ug/kg	22	--	1
Bromochloromethane	ND		ug/kg	4.5	--	1
Tetrahydrofuran	ND		ug/kg	9.0	--	1
2,2-Dichloropropane	ND		ug/kg	4.5	--	1
1,2-Dibromoethane	ND		ug/kg	2.2	--	1
1,3-Dichloropropane	ND		ug/kg	4.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Bromobenzene	ND		ug/kg	4.5	--	1
n-Butylbenzene	ND		ug/kg	2.2	--	1
sec-Butylbenzene	ND		ug/kg	2.2	--	1
tert-Butylbenzene	ND		ug/kg	4.5	--	1
o-Chlorotoluene	ND		ug/kg	4.5	--	1
p-Chlorotoluene	ND		ug/kg	4.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.8	--	1
Hexachlorobutadiene	ND		ug/kg	9.0	--	1
Isopropylbenzene	ND		ug/kg	2.2	--	1
p-Isopropyltoluene	ND		ug/kg	2.2	--	1
Naphthalene	ND		ug/kg	9.0	--	1
n-Propylbenzene	ND		ug/kg	2.2	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05 Date Collected: 01/07/20 09:00

Client ID: LEDGE-5 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	4.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.5	--	1
Diethyl ether	ND		ug/kg	4.5	--	1
Diisopropyl Ether	ND		ug/kg	4.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.5	--	1
1,4-Dioxane	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	104		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06
Client ID: LEDGE-6 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 20:43
Analyst: MKS
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	9.4	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	2.8	--	1
Carbon tetrachloride	ND		ug/kg	1.9	--	1
1,2-Dichloropropane	ND		ug/kg	1.9	--	1
Dibromochloromethane	ND		ug/kg	1.9	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	0.94	--	1
Chlorobenzene	ND		ug/kg	0.94	--	1
Trichlorofluoromethane	ND		ug/kg	7.5	--	1
1,2-Dichloroethane	ND		ug/kg	1.9	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.94	--	1
Bromodichloromethane	ND		ug/kg	0.94	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.9	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.94	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.94	--	1
1,1-Dichloropropene	ND		ug/kg	0.94	--	1
Bromoform	ND		ug/kg	7.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.94	--	1
Benzene	ND		ug/kg	0.94	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.9	--	1
Chloromethane	ND		ug/kg	7.5	--	1
Bromomethane	ND		ug/kg	3.7	--	1
Vinyl chloride	ND		ug/kg	1.9	--	1
Chloroethane	ND		ug/kg	3.7	--	1
1,1-Dichloroethene	ND		ug/kg	1.9	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.8	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06 Date Collected: 01/07/20 09:20

Client ID: LEDGE-6 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.94	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.7	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.7	--	1
Methyl tert butyl ether	ND		ug/kg	3.7	--	1
p/m-Xylene	ND		ug/kg	3.7	--	1
o-Xylene	ND		ug/kg	1.9	--	1
Xylenes, Total	ND		ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.9	--	1
Dibromomethane	ND		ug/kg	3.7	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.7	--	1
Styrene	ND		ug/kg	1.9	--	1
Dichlorodifluoromethane	ND		ug/kg	19	--	1
Acetone	ND		ug/kg	47	--	1
Carbon disulfide	ND		ug/kg	19	--	1
Methyl ethyl ketone	ND		ug/kg	19	--	1
Methyl isobutyl ketone	ND		ug/kg	19	--	1
2-Hexanone	ND		ug/kg	19	--	1
Bromochloromethane	ND		ug/kg	3.7	--	1
Tetrahydrofuran	ND		ug/kg	7.5	--	1
2,2-Dichloropropane	ND		ug/kg	3.7	--	1
1,2-Dibromoethane	ND		ug/kg	1.9	--	1
1,3-Dichloropropane	ND		ug/kg	3.7	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.94	--	1
Bromobenzene	ND		ug/kg	3.7	--	1
n-Butylbenzene	ND		ug/kg	1.9	--	1
sec-Butylbenzene	ND		ug/kg	1.9	--	1
tert-Butylbenzene	ND		ug/kg	3.7	--	1
o-Chlorotoluene	ND		ug/kg	3.7	--	1
p-Chlorotoluene	ND		ug/kg	3.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.6	--	1
Hexachlorobutadiene	ND		ug/kg	7.5	--	1
Isopropylbenzene	ND		ug/kg	1.9	--	1
p-Isopropyltoluene	ND		ug/kg	1.9	--	1
Naphthalene	ND		ug/kg	7.5	--	1
n-Propylbenzene	ND		ug/kg	1.9	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06 Date Collected: 01/07/20 09:20

Client ID: LEDGE-6 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.7	--	1
Diethyl ether	ND		ug/kg	3.7	--	1
Diisopropyl Ether	ND		ug/kg	3.7	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.7	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.7	--	1
1,4-Dioxane	ND		ug/kg	150	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07
Client ID: LEDGE-7 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 21:10
Analyst: MKS
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.5	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.6	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	1.1	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.55	--	1
Chlorobenzene	ND		ug/kg	0.55	--	1
Trichlorofluoromethane	ND		ug/kg	4.4	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.55	--	1
Bromodichloromethane	ND		ug/kg	0.55	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.55	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.55	--	1
1,1-Dichloropropene	ND		ug/kg	0.55	--	1
Bromoform	ND		ug/kg	4.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.55	--	1
Benzene	ND		ug/kg	0.55	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.4	--	1
Bromomethane	ND		ug/kg	2.2	--	1
Vinyl chloride	ND		ug/kg	1.1	--	1
Chloroethane	ND		ug/kg	2.2	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07 Date Collected: 01/07/20 09:40

Client ID: LEDGE-7 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.55	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	--	1
Methyl tert butyl ether	ND		ug/kg	2.2	--	1
p/m-Xylene	ND		ug/kg	2.2	--	1
o-Xylene	ND		ug/kg	1.1	--	1
Xylenes, Total	ND		ug/kg	1.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	2.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	--	1
Styrene	ND		ug/kg	1.1	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	27	--	1
Carbon disulfide	ND		ug/kg	11	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	2.2	--	1
Tetrahydrofuran	ND		ug/kg	4.4	--	1
2,2-Dichloropropane	ND		ug/kg	2.2	--	1
1,2-Dibromoethane	ND		ug/kg	1.1	--	1
1,3-Dichloropropane	ND		ug/kg	2.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.55	--	1
Bromobenzene	ND		ug/kg	2.2	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	2.2	--	1
o-Chlorotoluene	ND		ug/kg	2.2	--	1
p-Chlorotoluene	ND		ug/kg	2.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	--	1
Hexachlorobutadiene	ND		ug/kg	4.4	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.4	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07 Date Collected: 01/07/20 09:40

Client ID: LEDGE-7 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	--	1
Diethyl ether	ND		ug/kg	2.2	--	1
Diisopropyl Ether	ND		ug/kg	2.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.2	--	1
1,4-Dioxane	ND		ug/kg	88	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	102		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08
Client ID: LEDGE-1 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/11/20 13:48
Analyst: NLK
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	11	--	1
1,1-Dichloroethane	ND		ug/kg	2.1	--	1
Chloroform	ND		ug/kg	3.2	--	1
Carbon tetrachloride	ND		ug/kg	2.1	--	1
1,2-Dichloropropane	ND		ug/kg	2.1	--	1
Dibromochloromethane	ND		ug/kg	2.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.1	--	1
Tetrachloroethene	ND		ug/kg	1.1	--	1
Chlorobenzene	ND		ug/kg	1.1	--	1
Trichlorofluoromethane	ND		ug/kg	8.6	--	1
1,2-Dichloroethane	ND		ug/kg	2.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.1	--	1
Bromodichloromethane	ND		ug/kg	1.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.1	--	1
1,1-Dichloropropene	ND		ug/kg	1.1	--	1
Bromoform	ND		ug/kg	8.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Benzene	ND		ug/kg	1.1	--	1
Toluene	ND		ug/kg	2.1	--	1
Ethylbenzene	ND		ug/kg	2.1	--	1
Chloromethane	ND		ug/kg	8.6	--	1
Bromomethane	ND		ug/kg	4.3	--	1
Vinyl chloride	ND		ug/kg	2.1	--	1
Chloroethane	ND		ug/kg	4.3	--	1
1,1-Dichloroethene	ND		ug/kg	2.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.2	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08 Date Collected: 01/07/20 10:00

Client ID: LEDGE-1 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.3	--	1
1,3-Dichlorobenzene	ND		ug/kg	4.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.3	--	1
Methyl tert butyl ether	ND		ug/kg	4.3	--	1
p/m-Xylene	ND		ug/kg	4.3	--	1
o-Xylene	ND		ug/kg	2.1	--	1
Xylenes, Total	ND		ug/kg	2.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.1	--	1
Dibromomethane	ND		ug/kg	4.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.3	--	1
Styrene	ND		ug/kg	2.1	--	1
Dichlorodifluoromethane	ND		ug/kg	21	--	1
Acetone	ND		ug/kg	54	--	1
Carbon disulfide	ND		ug/kg	21	--	1
Methyl ethyl ketone	ND		ug/kg	21	--	1
Methyl isobutyl ketone	ND		ug/kg	21	--	1
2-Hexanone	ND		ug/kg	21	--	1
Bromochloromethane	ND		ug/kg	4.3	--	1
Tetrahydrofuran	ND		ug/kg	8.6	--	1
2,2-Dichloropropane	ND		ug/kg	4.3	--	1
1,2-Dibromoethane	ND		ug/kg	2.1	--	1
1,3-Dichloropropane	ND		ug/kg	4.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Bromobenzene	ND		ug/kg	4.3	--	1
n-Butylbenzene	ND		ug/kg	2.1	--	1
sec-Butylbenzene	ND		ug/kg	2.1	--	1
tert-Butylbenzene	ND		ug/kg	4.3	--	1
o-Chlorotoluene	ND		ug/kg	4.3	--	1
p-Chlorotoluene	ND		ug/kg	4.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.4	--	1
Hexachlorobutadiene	ND		ug/kg	8.6	--	1
Isopropylbenzene	ND		ug/kg	2.1	--	1
p-Isopropyltoluene	ND		ug/kg	2.1	--	1
Naphthalene	ND		ug/kg	8.6	--	1
n-Propylbenzene	ND		ug/kg	2.1	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08 Date Collected: 01/07/20 10:00

Client ID: LEDGE-1 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	4.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.3	--	1
Diethyl ether	ND		ug/kg	4.3	--	1
Diisopropyl Ether	ND		ug/kg	4.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.3	--	1
1,4-Dioxane	ND		ug/kg	170	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	100		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09
Client ID: LEDGE-2 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 12:44
Analyst: JC
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.5	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.6	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	1.1	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.55	--	1
Chlorobenzene	ND		ug/kg	0.55	--	1
Trichlorofluoromethane	ND		ug/kg	4.4	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.55	--	1
Bromodichloromethane	ND		ug/kg	0.55	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.55	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.55	--	1
1,1-Dichloropropene	ND		ug/kg	0.55	--	1
Bromoform	ND		ug/kg	4.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.55	--	1
Benzene	ND		ug/kg	0.55	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.4	--	1
Bromomethane	ND		ug/kg	2.2	--	1
Vinyl chloride	ND		ug/kg	1.1	--	1
Chloroethane	ND		ug/kg	2.2	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09 Date Collected: 01/07/20 10:15

Client ID: LEDGE-2 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.55	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	--	1
Methyl tert butyl ether	ND		ug/kg	2.2	--	1
p/m-Xylene	ND		ug/kg	2.2	--	1
o-Xylene	ND		ug/kg	1.1	--	1
Xylenes, Total	ND		ug/kg	1.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	2.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	--	1
Styrene	ND		ug/kg	1.1	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	28	--	1
Carbon disulfide	ND		ug/kg	11	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	2.2	--	1
Tetrahydrofuran	ND		ug/kg	4.4	--	1
2,2-Dichloropropane	ND		ug/kg	2.2	--	1
1,2-Dibromoethane	ND		ug/kg	1.1	--	1
1,3-Dichloropropane	ND		ug/kg	2.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.55	--	1
Bromobenzene	ND		ug/kg	2.2	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	2.2	--	1
o-Chlorotoluene	ND		ug/kg	2.2	--	1
p-Chlorotoluene	ND		ug/kg	2.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	--	1
Hexachlorobutadiene	ND		ug/kg	4.4	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.4	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09 Date Collected: 01/07/20 10:15

Client ID: LEDGE-2 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	--	1
Diethyl ether	ND		ug/kg	2.2	--	1
Diisopropyl Ether	ND		ug/kg	2.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.2	--	1
1,4-Dioxane	ND		ug/kg	88	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	109		70-130

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10
Client ID: LEDGE-3 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 13:23
Analyst: JC
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	2.7	--	1
Chloroform	ND		ug/kg	4.0	--	1
Carbon tetrachloride	ND		ug/kg	2.7	--	1
1,2-Dichloropropane	ND		ug/kg	2.7	--	1
Dibromochloromethane	ND		ug/kg	2.7	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.7	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	11	--	1
1,2-Dichloroethane	ND		ug/kg	2.7	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.7	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	1.3	--	1
Bromoform	ND		ug/kg	11	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	2.7	--	1
Ethylbenzene	ND		ug/kg	2.7	--	1
Chloromethane	ND		ug/kg	11	--	1
Bromomethane	ND		ug/kg	5.4	--	1
Vinyl chloride	ND		ug/kg	2.7	--	1
Chloroethane	ND		ug/kg	5.4	--	1
1,1-Dichloroethene	ND		ug/kg	2.7	--	1
trans-1,2-Dichloroethene	ND		ug/kg	4.0	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10 Date Collected: 01/07/20 10:30

Client ID: LEDGE-3 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.4	--	1
1,3-Dichlorobenzene	ND		ug/kg	5.4	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.4	--	1
Methyl tert butyl ether	ND		ug/kg	5.4	--	1
p/m-Xylene	ND		ug/kg	5.4	--	1
o-Xylene	ND		ug/kg	2.7	--	1
Xylenes, Total	ND		ug/kg	2.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.7	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.7	--	1
Dibromomethane	ND		ug/kg	5.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.4	--	1
Styrene	ND		ug/kg	2.7	--	1
Dichlorodifluoromethane	ND		ug/kg	27	--	1
Acetone	ND		ug/kg	67	--	1
Carbon disulfide	ND		ug/kg	27	--	1
Methyl ethyl ketone	ND		ug/kg	27	--	1
Methyl isobutyl ketone	ND		ug/kg	27	--	1
2-Hexanone	ND		ug/kg	27	--	1
Bromochloromethane	ND		ug/kg	5.4	--	1
Tetrahydrofuran	ND		ug/kg	11	--	1
2,2-Dichloropropane	ND		ug/kg	5.4	--	1
1,2-Dibromoethane	ND		ug/kg	2.7	--	1
1,3-Dichloropropane	ND		ug/kg	5.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	5.4	--	1
n-Butylbenzene	ND		ug/kg	2.7	--	1
sec-Butylbenzene	ND		ug/kg	2.7	--	1
tert-Butylbenzene	ND		ug/kg	5.4	--	1
o-Chlorotoluene	ND		ug/kg	5.4	--	1
p-Chlorotoluene	ND		ug/kg	5.4	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.0	--	1
Hexachlorobutadiene	ND		ug/kg	11	--	1
Isopropylbenzene	ND		ug/kg	2.7	--	1
p-Isopropyltoluene	ND		ug/kg	2.7	--	1
Naphthalene	ND		ug/kg	11	--	1
n-Propylbenzene	ND		ug/kg	2.7	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10 Date Collected: 01/07/20 10:30

Client ID: LEDGE-3 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	5.4	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.4	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.4	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.4	--	1
Diethyl ether	ND		ug/kg	5.4	--	1
Diisopropyl Ether	ND		ug/kg	5.4	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.4	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.4	--	1
1,4-Dioxane	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	111		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11
Client ID: LEDGE-4 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 14:02
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.4	--	1
1,1-Dichloroethane	ND		ug/kg	1.3	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	1.3	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	--	1
Tetrachloroethene	ND		ug/kg	0.64	--	1
Chlorobenzene	ND		ug/kg	0.64	--	1
Trichlorofluoromethane	ND		ug/kg	5.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.64	--	1
Bromodichloromethane	ND		ug/kg	0.64	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.64	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.64	--	1
1,1-Dichloropropene	ND		ug/kg	0.64	--	1
Bromoform	ND		ug/kg	5.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.64	--	1
Benzene	ND		ug/kg	0.64	--	1
Toluene	ND		ug/kg	1.3	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.1	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	1.3	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11 Date Collected: 01/07/20 10:45

Client ID: LEDGE-4 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.64	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.5	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	1.3	--	1
Xylenes, Total	ND		ug/kg	1.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	2.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.5	--	1
Styrene	ND		ug/kg	1.3	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	32	--	1
Carbon disulfide	ND		ug/kg	13	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	2.5	--	1
Tetrahydrofuran	ND		ug/kg	5.1	--	1
2,2-Dichloropropane	ND		ug/kg	2.5	--	1
1,2-Dibromoethane	ND		ug/kg	1.3	--	1
1,3-Dichloropropane	ND		ug/kg	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.64	--	1
Bromobenzene	ND		ug/kg	2.5	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	2.5	--	1
o-Chlorotoluene	ND		ug/kg	2.5	--	1
p-Chlorotoluene	ND		ug/kg	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.8	--	1
Hexachlorobutadiene	ND		ug/kg	5.1	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.1	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11 Date Collected: 01/07/20 10:45

Client ID: LEDGE-4 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.5	--	1
Diethyl ether	ND		ug/kg	2.5	--	1
Diisopropyl Ether	ND		ug/kg	2.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.5	--	1
1,4-Dioxane	ND		ug/kg	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	113		70-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12
Client ID: LEDGE-5 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 14:42
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	10	--	1
1,1-Dichloroethane	ND		ug/kg	2.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	2.0	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.0	--	1
Tetrachloroethene	ND		ug/kg	1.0	--	1
Chlorobenzene	ND		ug/kg	1.0	--	1
Trichlorofluoromethane	ND		ug/kg	8.0	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.0	--	1
Bromodichloromethane	ND		ug/kg	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--	1
1,1-Dichloropropene	ND		ug/kg	1.0	--	1
Bromoform	ND		ug/kg	8.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--	1
Benzene	ND		ug/kg	1.0	--	1
Toluene	ND		ug/kg	2.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	8.0	--	1
Bromomethane	ND		ug/kg	4.0	--	1
Vinyl chloride	ND		ug/kg	2.0	--	1
Chloroethane	ND		ug/kg	4.0	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12 Date Collected: 01/07/20 13:00

Client ID: LEDGE-5 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.0	--	1
1,3-Dichlorobenzene	ND		ug/kg	4.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.0	--	1
Methyl tert butyl ether	ND		ug/kg	4.0	--	1
p/m-Xylene	ND		ug/kg	4.0	--	1
o-Xylene	ND		ug/kg	2.0	--	1
Xylenes, Total	ND		ug/kg	2.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	4.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.0	--	1
Styrene	ND		ug/kg	2.0	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	50	--	1
Carbon disulfide	ND		ug/kg	20	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	4.0	--	1
Tetrahydrofuran	ND		ug/kg	8.0	--	1
2,2-Dichloropropane	ND		ug/kg	4.0	--	1
1,2-Dibromoethane	ND		ug/kg	2.0	--	1
1,3-Dichloropropane	ND		ug/kg	4.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--	1
Bromobenzene	ND		ug/kg	4.0	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	4.0	--	1
o-Chlorotoluene	ND		ug/kg	4.0	--	1
p-Chlorotoluene	ND		ug/kg	4.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.0	--	1
Hexachlorobutadiene	ND		ug/kg	8.0	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	8.0	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12 Date Collected: 01/07/20 13:00

Client ID: LEDGE-5 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--	1
Diethyl ether	ND		ug/kg	4.0	--	1
Diisopropyl Ether	ND		ug/kg	4.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--	1
1,4-Dioxane	ND		ug/kg	160	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	110		70-130

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-07 Batch: WG1328935-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-07 Batch: WG1328935-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-07 Batch: WG1328935-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
Diethyl ether	ND		ug/kg	2.0	--
Diisopropyl Ether	ND		ug/kg	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--
1,4-Dioxane	ND		ug/kg	80	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:25
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 09-12 Batch: WG1329096-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:25
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 09-12 Batch: WG1329096-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:25
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 09-12 Batch: WG1329096-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
Diethyl ether	ND		ug/kg	2.0	--
Diisopropyl Ether	ND		ug/kg	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--
1,4-Dioxane	ND		ug/kg	80	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	111		70-130

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/11/20 08:46
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08 Batch: WG1329461-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/11/20 08:46
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08 Batch: WG1329461-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/11/20 08:46
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08 Batch: WG1329461-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
Diethyl ether	ND		ug/kg	2.0	--
Diisopropyl Ether	ND		ug/kg	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--
1,4-Dioxane	ND		ug/kg	80	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1328935-3 WG1328935-4								
Methylene chloride	86		84		70-130	2		20
1,1-Dichloroethane	90		86		70-130	5		20
Chloroform	90		87		70-130	3		20
Carbon tetrachloride	88		85		70-130	3		20
1,2-Dichloropropane	93		90		70-130	3		20
Dibromochloromethane	95		93		70-130	2		20
1,1,2-Trichloroethane	90		89		70-130	1		20
Tetrachloroethene	86		85		70-130	1		20
Chlorobenzene	86		85		70-130	1		20
Trichlorofluoromethane	86		80		70-130	7		20
1,2-Dichloroethane	92		89		70-130	3		20
1,1,1-Trichloroethane	89		86		70-130	3		20
Bromodichloromethane	97		94		70-130	3		20
trans-1,3-Dichloropropene	84		82		70-130	2		20
cis-1,3-Dichloropropene	87		85		70-130	2		20
1,1-Dichloropropene	90		86		70-130	5		20
Bromoform	86		86		70-130	0		20
1,1,2,2-Tetrachloroethane	87		86		70-130	1		20
Benzene	89		86		70-130	3		20
Toluene	85		84		70-130	1		20
Ethylbenzene	86		85		70-130	1		20
Chloromethane	84		78		70-130	7		20
Bromomethane	86		80		70-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1328935-3 WG1328935-4								
Vinyl chloride	84		80		70-130	5		20
Chloroethane	89		84		70-130	6		20
1,1-Dichloroethene	107		81		70-130	**28**	Q	20
trans-1,2-Dichloroethene	90		86		70-130	5		20
Trichloroethene	91		88		70-130	3		20
1,2-Dichlorobenzene	84		85		70-130	1		20
1,3-Dichlorobenzene	84		85		70-130	1		20
1,4-Dichlorobenzene	82		83		70-130	1		20
Methyl tert butyl ether	94		92		70-130	2		20
p/m-Xylene	89		88		70-130	1		20
o-Xylene	90		89		70-130	1		20
cis-1,2-Dichloroethene	92		90		70-130	2		20
Dibromomethane	96		94		70-130	2		20
1,2,3-Trichloropropane	82		81		70-130	1		20
Styrene	79		78		70-130	1		20
Dichlorodifluoromethane	75		71		70-130	5		20
Acetone	91		85		70-130	7		20
Carbon disulfide	107		80		70-130	**29**	Q	20
Methyl ethyl ketone	94		82		70-130	14		20
Methyl isobutyl ketone	90		86		70-130	5		20
2-Hexanone	89		84		70-130	6		20
Bromochloromethane	94		93		70-130	1		20
Tetrahydrofuran	100		96		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1328935-3 WG1328935-4								
2,2-Dichloropropane	92		87		70-130	6		20
1,2-Dibromoethane	93		93		70-130	0		20
1,3-Dichloropropane	89		89		70-130	0		20
1,1,1,2-Tetrachloroethane	90		90		70-130	0		20
Bromobenzene	82		84		70-130	2		20
n-Butylbenzene	83		82		70-130	1		20
sec-Butylbenzene	82		81		70-130	1		20
tert-Butylbenzene	83		83		70-130	0		20
o-Chlorotoluene	80		81		70-130	1		20
p-Chlorotoluene	82		84		70-130	2		20
1,2-Dibromo-3-chloropropane	80		77		70-130	4		20
Hexachlorobutadiene	80		78		70-130	3		20
Isopropylbenzene	83		83		70-130	0		20
p-Isopropyltoluene	84		84		70-130	0		20
Naphthalene	93		89		70-130	4		20
n-Propylbenzene	81		82		70-130	1		20
1,2,3-Trichlorobenzene	86		85		70-130	1		20
1,2,4-Trichlorobenzene	90		88		70-130	2		20
1,3,5-Trimethylbenzene	82		82		70-130	0		20
1,2,4-Trimethylbenzene	85		84		70-130	1		20
Diethyl ether	89		89		70-130	0		20
Diisopropyl Ether	95		91		70-130	4		20
Ethyl-Tert-Butyl-Ether	95		92		70-130	3		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1328935-3 WG1328935-4								
Tertiary-Amyl Methyl Ether	95		92		70-130	3		20
1,4-Dioxane	98		89		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	97		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 09-12 Batch: WG1329096-3 WG1329096-4								
Methylene chloride	84		89		70-130	6		20
1,1-Dichloroethane	87		93		70-130	7		20
Chloroform	92		99		70-130	7		20
Carbon tetrachloride	103		111		70-130	7		20
1,2-Dichloropropane	86		90		70-130	5		20
Dibromochloromethane	99		104		70-130	5		20
1,1,2-Trichloroethane	84		86		70-130	2		20
Tetrachloroethene	91		96		70-130	5		20
Chlorobenzene	88		93		70-130	6		20
Trichlorofluoromethane	96		103		70-130	7		20
1,2-Dichloroethane	97		101		70-130	4		20
1,1,1-Trichloroethane	100		108		70-130	8		20
Bromodichloromethane	96		102		70-130	6		20
trans-1,3-Dichloropropene	90		95		70-130	5		20
cis-1,3-Dichloropropene	94		98		70-130	4		20
1,1-Dichloropropene	90		95		70-130	5		20
Bromoform	96		100		70-130	4		20
1,1,2,2-Tetrachloroethane	79		80		70-130	1		20
Benzene	82		88		70-130	7		20
Toluene	83		88		70-130	6		20
Ethylbenzene	87		93		70-130	7		20
Chloromethane	**62**	Q	**65**	Q	70-130	5		20
Bromomethane	84		94		70-130	11		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 09-12 Batch: WG1329096-3 WG1329096-4								
Vinyl chloride	85		90		70-130	6		20
Chloroethane	82		90		70-130	9		20
1,1-Dichloroethene	89		94		70-130	5		20
trans-1,2-Dichloroethene	90		96		70-130	6		20
Trichloroethene	93		99		70-130	6		20
1,2-Dichlorobenzene	88		93		70-130	6		20
1,3-Dichlorobenzene	88		92		70-130	4		20
1,4-Dichlorobenzene	88		92		70-130	4		20
Methyl tert butyl ether	96		99		70-130	3		20
p/m-Xylene	90		96		70-130	6		20
o-Xylene	92		98		70-130	6		20
cis-1,2-Dichloroethene	88		95		70-130	8		20
Dibromomethane	94		97		70-130	3		20
1,2,3-Trichloropropane	80		80		70-130	0		20
Styrene	95		101		70-130	6		20
Dichlorodifluoromethane	80		83		70-130	4		20
Acetone	**65**	Q	**60**	Q	70-130	8		20
Carbon disulfide	74		79		70-130	7		20
Methyl ethyl ketone	84		79		70-130	6		20
Methyl isobutyl ketone	88		87		70-130	1		20
2-Hexanone	82		79		70-130	4		20
Bromochloromethane	100		105		70-130	5		20
Tetrahydrofuran	77		74		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 09-12 Batch: WG1329096-3 WG1329096-4								
2,2-Dichloropropane	98		104		70-130	6		20
1,2-Dibromoethane	94		96		70-130	2		20
1,3-Dichloropropane	84		86		70-130	2		20
1,1,1,2-Tetrachloroethane	97		104		70-130	7		20
Bromobenzene	88		93		70-130	6		20
n-Butylbenzene	84		88		70-130	5		20
sec-Butylbenzene	86		91		70-130	6		20
tert-Butylbenzene	90		95		70-130	5		20
o-Chlorotoluene	83		88		70-130	6		20
p-Chlorotoluene	84		88		70-130	5		20
1,2-Dibromo-3-chloropropane	94		91		70-130	3		20
Hexachlorobutadiene	93		99		70-130	6		20
Isopropylbenzene	87		92		70-130	6		20
p-Isopropyltoluene	89		94		70-130	5		20
Naphthalene	92		92		70-130	0		20
n-Propylbenzene	82		87		70-130	6		20
1,2,3-Trichlorobenzene	95		98		70-130	3		20
1,2,4-Trichlorobenzene	96		100		70-130	4		20
1,3,5-Trimethylbenzene	87		92		70-130	6		20
1,2,4-Trimethylbenzene	88		93		70-130	6		20
Diethyl ether	89		92		70-130	3		20
Diisopropyl Ether	83		87		70-130	5		20
Ethyl-Tert-Butyl-Ether	97		101		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 09-12 Batch: WG1329096-3 WG1329096-4								
Tertiary-Amyl Methyl Ether	94		96		70-130	2		20
1,4-Dioxane	93		93		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		104		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	107		108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08 Batch: WG1329461-3 WG1329461-4								
Methylene chloride	100		103		70-130	3		20
1,1-Dichloroethane	108		111		70-130	3		20
Chloroform	106		110		70-130	4		20
Carbon tetrachloride	110		112		70-130	2		20
1,2-Dichloropropane	109		112		70-130	3		20
Dibromochloromethane	106		110		70-130	4		20
1,1,2-Trichloroethane	100		104		70-130	4		20
Tetrachloroethene	106		107		70-130	1		20
Chlorobenzene	100		102		70-130	2		20
Trichlorofluoromethane	112		112		70-130	0		20
1,2-Dichloroethane	105		110		70-130	5		20
1,1,1-Trichloroethane	110		112		70-130	2		20
Bromodichloromethane	112		116		70-130	4		20
trans-1,3-Dichloropropene	93		96		70-130	3		20
cis-1,3-Dichloropropene	100		103		70-130	3		20
1,1-Dichloropropene	113		115		70-130	2		20
Bromoform	96		99		70-130	3		20
1,1,2,2-Tetrachloroethane	94		98		70-130	4		20
Benzene	107		110		70-130	3		20
Toluene	101		102		70-130	1		20
Ethylbenzene	103		105		70-130	2		20
Chloromethane	111		100		70-130	10		20
Bromomethane	103		99		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08 Batch: WG1329461-3 WG1329461-4								
Vinyl chloride	107		107		70-130	0		20
Chloroethane	113		112		70-130	1		20
1,1-Dichloroethene	**134**	Q	122		70-130	9		20
trans-1,2-Dichloroethene	109		113		70-130	4		20
Trichloroethene	112		114		70-130	2		20
1,2-Dichlorobenzene	98		99		70-130	1		20
1,3-Dichlorobenzene	100		101		70-130	1		20
1,4-Dichlorobenzene	97		97		70-130	0		20
Methyl tert butyl ether	103		108		70-130	5		20
p/m-Xylene	106		108		70-130	2		20
o-Xylene	106		109		70-130	3		20
cis-1,2-Dichloroethene	110		112		70-130	2		20
Dibromomethane	107		110		70-130	3		20
1,2,3-Trichloropropane	87		93		70-130	7		20
Styrene	93		95		70-130	2		20
Dichlorodifluoromethane	98		99		70-130	1		20
Acetone	95		98		70-130	3		20
Carbon disulfide	118		110		70-130	7		20
Methyl ethyl ketone	97		107		70-130	10		20
Methyl isobutyl ketone	92		97		70-130	5		20
2-Hexanone	91		94		70-130	3		20
Bromochloromethane	109		112		70-130	3		20
Tetrahydrofuran	103		113		70-130	9		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08 Batch: WG1329461-3 WG1329461-4								
2,2-Dichloropropane	112		113		70-130	1		20
1,2-Dibromoethane	102		107		70-130	5		20
1,3-Dichloropropane	100		103		70-130	3		20
1,1,1,2-Tetrachloroethane	105		107		70-130	2		20
Bromobenzene	97		99		70-130	2		20
n-Butylbenzene	102		103		70-130	1		20
sec-Butylbenzene	101		102		70-130	1		20
tert-Butylbenzene	101		103		70-130	2		20
o-Chlorotoluene	97		99		70-130	2		20
p-Chlorotoluene	97		99		70-130	2		20
1,2-Dibromo-3-chloropropane	82		88		70-130	7		20
Hexachlorobutadiene	99		98		70-130	1		20
Isopropylbenzene	101		103		70-130	2		20
p-Isopropyltoluene	103		103		70-130	0		20
Naphthalene	96		101		70-130	5		20
n-Propylbenzene	100		101		70-130	1		20
1,2,3-Trichlorobenzene	98		99		70-130	1		20
1,2,4-Trichlorobenzene	101		102		70-130	1		20
1,3,5-Trimethylbenzene	99		102		70-130	3		20
1,2,4-Trimethylbenzene	102		103		70-130	1		20
Diethyl ether	100		104		70-130	4		20
Diisopropyl Ether	110		113		70-130	3		20
Ethyl-Tert-Butyl-Ether	107		111		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08 Batch: WG1329461-3 WG1329461-4								
Tertiary-Amyl Methyl Ether	105		109		70-130	4		20
1,4-Dioxane	93		103		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		98		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	99		100		70-130

SEMIVOLATILES

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01
Client ID: LEDGE-1 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 18:14
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	73	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	73	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		30-130
2-Fluorobiphenyl	80		30-130
4-Terphenyl-d14	88		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02
Client ID: LEDGE-2 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 18:38
Analyst: EK
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	75	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	74		30-130
4-Terphenyl-d14	92		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03
Client ID: LEDGE-3 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 19:03
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	84		30-130
4-Terphenyl-d14	93		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04
Client ID: LEDGE-4 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 19:27
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	73	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	73	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	85		30-130
4-Terphenyl-d14	93		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05
Client ID: LEDGE-5 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 19:51
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		30-130
2-Fluorobiphenyl	86		30-130
4-Terphenyl-d14	92		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06
Client ID: LEDGE-6 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 20:15
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	73	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	73	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	84		30-130
4-Terphenyl-d14	94		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07
Client ID: LEDGE-7 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 20:40
Analyst: EK
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	73	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	73	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	73		30-130
4-Terphenyl-d14	93		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08
Client ID: LEDGE-1 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 21:04
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		30-130
2-Fluorobiphenyl	75		30-130
4-Terphenyl-d14	81		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09
Client ID: LEDGE-2 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 21:28
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	73	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	73	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	79		30-130
4-Terphenyl-d14	82		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10
Client ID: LEDGE-3 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 21:53
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		30-130
2-Fluorobiphenyl	68		30-130
4-Terphenyl-d14	79		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11
Client ID: LEDGE-4 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/12/20 00:43
Analyst: EK
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 20:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	75	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	69		30-130
4-Terphenyl-d14	76		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12
Client ID: LEDGE-5 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/13/20 19:28
Analyst: ALS
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 20:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	76	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	76	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		30-130
2-Fluorobiphenyl	70		30-130
4-Terphenyl-d14	70		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 01/09/20 15:47
Analyst: JRW

Extraction Method: EPA 3546
Extraction Date: 01/09/20 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 11-12 Batch: WG1328187-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	99	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	100		30-130
4-Terphenyl-d14	120		30-130

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 01/10/20 21:18
Analyst: ALS

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-10 Batch: WG1328561-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	99	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	89		30-130
4-Terphenyl-d14	108		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 11-12 Batch: WG1328187-2 WG1328187-3								
Acenaphthene	86		91		40-140	6		30
Fluoranthene	88		91		40-140	3		30
Naphthalene	77		84		40-140	9		30
Benzo(a)anthracene	79		87		40-140	10		30
Benzo(a)pyrene	83		89		40-140	7		30
Benzo(b)fluoranthene	93		101		40-140	8		30
Benzo(k)fluoranthene	81		88		40-140	8		30
Chrysene	77		82		40-140	6		30
Acenaphthylene	86		92		40-140	7		30
Anthracene	85		88		40-140	3		30
Benzo(ghi)perylene	90		97		40-140	7		30
Fluorene	91		98		40-140	7		30
Phenanthrene	88		92		40-140	4		30
Dibenzo(a,h)anthracene	90		98		40-140	9		30
Indeno(1,2,3-cd)pyrene	89		96		40-140	8		30
Pyrene	87		90		40-140	3		30
2-Methylnaphthalene	83		90		40-140	8		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.

Project Number: 19-2000

Lab Number: L2000719

Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 11-12 Batch: WG1328187-2 WG1328187-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	76		76		30-130
2-Fluorobiphenyl	92		94		30-130
4-Terphenyl-d14	109		103		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-10 Batch: WG1328561-2 WG1328561-3								
Acenaphthene	88		92		40-140	4		30
Fluoranthene	85		92		40-140	8		30
Naphthalene	86		90		40-140	5		30
Benzo(a)anthracene	83		95		40-140	13		30
Benzo(a)pyrene	91		105		40-140	14		30
Benzo(b)fluoranthene	94		107		40-140	13		30
Benzo(k)fluoranthene	90		103		40-140	13		30
Chrysene	79		92		40-140	15		30
Acenaphthylene	86		90		40-140	5		30
Anthracene	90		97		40-140	7		30
Benzo(ghi)perylene	85		98		40-140	14		30
Fluorene	90		96		40-140	6		30
Phenanthrene	87		94		40-140	8		30
Dibenzo(a,h)anthracene	95		110		40-140	15		30
Indeno(1,2,3-cd)pyrene	89		104		40-140	16		30
Pyrene	82		89		40-140	8		30
2-Methylnaphthalene	86		90		40-140	5		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.

Project Number: 19-2000

Lab Number: L2000719

Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-10 Batch: WG1328561-2 WG1328561-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	75		74		30-130
2-Fluorobiphenyl	80		84		30-130
4-Terphenyl-d14	88		97		30-130

PETROLEUM HYDROCARBONS

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01
Client ID: LEDGE-1 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 10:32
Analyst: AN
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	62		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02
Client ID: LEDGE-2 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 11:04
Analyst: AN
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	64		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03
Client ID: LEDGE-3 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 16:27
Analyst: AN
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	33900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	63		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04
Client ID: LEDGE-4 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 11:37
Analyst: AN
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	69		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05
Client ID: LEDGE-5 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 12:09
Analyst: AN
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	67		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06
Client ID: LEDGE-6 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 12:41
Analyst: AN
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	33400	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	72		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07
Client ID: LEDGE-7 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 13:13
Analyst: AN
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	33800	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	65		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08
Client ID: LEDGE-1 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 14:18
Analyst: AN
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	71		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09
Client ID: LEDGE-2 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 14:50
Analyst: AN
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	70		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10
Client ID: LEDGE-3 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 15:22
Analyst: AN
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	60		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11
Client ID: LEDGE-4 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 11:41
Analyst: AN
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 15:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	104		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12
Client ID: LEDGE-5 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 12:13
Analyst: AN
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 15:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	94		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/09/20 15:52
Analyst: LL

Extraction Method: EPA 3546
Extraction Date: 01/09/20 03:34

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 11-12 Batch: WG1328197-1					
TPH (C10-C36)	ND		ug/kg	32900	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	83		40-140

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 11:04
Analyst: AN

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01-10 Batch: WG1328541-1					
TPH (C10-C36)	ND		ug/kg	32500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	77		40-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 11-12 Batch: WG1328197-2								
TPH (C10-C36)	90		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	78				40-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-10 Batch: WG1328541-2								
TPH (C10-C36)	74		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	66				40-140

METALS

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01
Client ID: LEDGE-1 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	1.80		mg/kg	0.416	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Barium, Total	4.29		mg/kg	0.416	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.416	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Chromium, Total	3.05		mg/kg	0.416	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Lead, Total	4.18		mg/kg	2.08	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.083	--	1	01/10/20 02:26	01/10/20 13:37	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.08	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.416	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC
Zinc, Total	8.53		mg/kg	2.08	--	1	01/09/20 20:50	01/10/20 16:59	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02
Client ID: LEDGE-2 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.43		mg/kg	0.428	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Barium, Total	4.10		mg/kg	0.428	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.428	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Chromium, Total	3.79		mg/kg	0.428	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Lead, Total	4.35		mg/kg	2.14	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.078	--	1	01/10/20 02:26	01/10/20 13:39	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.14	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.428	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC
Zinc, Total	7.23		mg/kg	2.14	--	1	01/09/20 20:50	01/10/20 17:04	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03
Client ID: LEDGE-3 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.33		mg/kg	0.423	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Barium, Total	8.96		mg/kg	0.423	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.423	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Chromium, Total	3.58		mg/kg	0.423	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Lead, Total	4.11		mg/kg	2.12	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.084	--	1	01/10/20 02:26	01/10/20 13:41	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.12	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.423	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC
Zinc, Total	9.01		mg/kg	2.12	--	1	01/09/20 20:50	01/10/20 17:08	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04
Client ID: LEDGE-4 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.10		mg/kg	0.417	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Barium, Total	4.56		mg/kg	0.417	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.417	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Chromium, Total	3.28		mg/kg	0.417	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Lead, Total	4.06		mg/kg	2.09	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.083	--	1	01/10/20 02:26	01/10/20 13:43	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.09	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.417	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC
Zinc, Total	8.51		mg/kg	2.09	--	1	01/09/20 20:50	01/10/20 17:13	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05
Client ID: LEDGE-5 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.25		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Barium, Total	5.37		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Chromium, Total	3.77		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Lead, Total	5.02		mg/kg	2.07	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.071	--	1	01/10/20 02:26	01/10/20 13:44	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.07	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC
Zinc, Total	7.83		mg/kg	2.07	--	1	01/09/20 20:50	01/10/20 17:17	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06
Client ID: LEDGE-6 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	1.51		mg/kg	0.410	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Barium, Total	2.97		mg/kg	0.410	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.410	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Chromium, Total	3.10		mg/kg	0.410	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Lead, Total	2.46		mg/kg	2.05	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.076	--	1	01/10/20 02:26	01/10/20 13:46	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.05	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.410	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC
Zinc, Total	5.83		mg/kg	2.05	--	1	01/09/20 20:50	01/10/20 17:22	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07
Client ID: LEDGE-7 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	1.64		mg/kg	0.406	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Barium, Total	2.93		mg/kg	0.406	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.406	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Chromium, Total	2.62		mg/kg	0.406	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Lead, Total	2.70		mg/kg	2.03	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.079	--	1	01/10/20 02:26	01/10/20 13:48	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.03	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.406	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC
Zinc, Total	4.87		mg/kg	2.03	--	1	01/09/20 20:50	01/10/20 17:47	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08
Client ID: LEDGE-1 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.88		mg/kg	0.412	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Barium, Total	4.94		mg/kg	0.412	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.412	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Chromium, Total	4.10		mg/kg	0.412	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Lead, Total	7.21		mg/kg	2.06	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.082	--	1	01/10/20 02:26	01/10/20 13:50	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.06	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.412	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC
Zinc, Total	9.08		mg/kg	2.06	--	1	01/09/20 20:50	01/10/20 17:52	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09
Client ID: LEDGE-2 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.52		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Barium, Total	5.41		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Chromium, Total	4.19		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Lead, Total	8.54		mg/kg	2.07	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.077	--	1	01/10/20 02:26	01/10/20 13:51	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.07	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.415	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC
Zinc, Total	9.68		mg/kg	2.07	--	1	01/09/20 20:50	01/10/20 17:56	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10
Client ID: LEDGE-3 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	3.10		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Barium, Total	8.40		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Chromium, Total	5.16		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Lead, Total	17.2		mg/kg	2.13	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.084	--	1	01/10/20 02:26	01/10/20 13:53	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.13	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC
Zinc, Total	13.2		mg/kg	2.13	--	1	01/09/20 20:50	01/10/20 18:01	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11
Client ID: LEDGE-4 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	3.19		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Barium, Total	7.22		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Chromium, Total	5.09		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Lead, Total	13.0		mg/kg	2.12	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Mercury, Total	0.083		mg/kg	0.082	--	1	01/09/20 07:15	01/09/20 12:06	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.12	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.425	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC
Zinc, Total	12.5		mg/kg	2.12	--	1	01/09/20 20:50	01/10/20 18:05	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP.
Lab Number: L2000719
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12
Client ID: LEDGE-5 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.63		mg/kg	0.422	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Barium, Total	7.64		mg/kg	0.422	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.422	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Chromium, Total	6.22		mg/kg	0.422	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Lead, Total	13.2		mg/kg	2.11	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.080	--	1	01/09/20 07:15	01/09/20 12:07	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.11	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.422	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC
Zinc, Total	12.4		mg/kg	2.11	--	1	01/09/20 20:50	01/10/20 18:10	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 11-12 Batch: WG1328216-1										
Mercury, Total	ND		mg/kg	0.083	--	1	01/09/20 07:15	01/09/20 11:52	97,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-12 Batch: WG1328549-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Barium, Total	ND		mg/kg	0.400	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Chromium, Total	ND		mg/kg	0.400	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Lead, Total	ND		mg/kg	2.00	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Selenium, Total	ND		mg/kg	2.00	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Silver, Total	ND		mg/kg	0.400	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC
Zinc, Total	ND		mg/kg	2.00	--	1	01/09/20 20:50	01/10/20 16:46	97,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG1328631-1										
Mercury, Total	ND		mg/kg	0.083	--	1	01/10/20 02:26	01/10/20 13:03	97,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 11-12 Batch: WG1328216-2 WG1328216-3 SRM Lot Number: D105-540								
Mercury, Total	91		91		60-141	0		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-12 Batch: WG1328549-2 WG1328549-3 SRM Lot Number: D105-540								
Arsenic, Total	108		113		70-130	5		30
Barium, Total	94		101		75-125	7		30
Cadmium, Total	92		102		75-125	10		30
Chromium, Total	97		104		70-130	7		30
Lead, Total	99		103		71-128	4		30
Selenium, Total	101		108		63-137	7		30
Silver, Total	109		112		69-131	3		30
Zinc, Total	97		103		70-130	6		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG1328631-2 WG1328631-3 SRM Lot Number: D105-540								
Mercury, Total	88		96		60-141	9		30

INORGANICS
&
MISCELLANEOUS

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-01
Client ID: LEDGE-1 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	1.69		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	93.7		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	6.8		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 08:26	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	100	--	1	01/10/20 03:36	01/10/20 19:39	121,4500NH3-H	AT
Phosphorus, Total	120		mg/kg	9.1	--	1.7	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	360		mg/kg	27	--	1.7	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-02
Client ID: LEDGE-2 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 07:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	3.39		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	92.2		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	6.9		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.98	--	1	-	01/09/20 08:32	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	260		mg/kg	130	--	1	01/10/20 03:36	01/10/20 19:45	121,4500NH3-H	AT
Phosphorus, Total	140		mg/kg	10	--	1.9	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	440		mg/kg	31	--	1.9	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-03
Client ID: LEDGE-3 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	537.95		MPN/gm	2	NA	10	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	94.0		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.0		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 08:33	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	130		mg/kg	120	--	1	01/10/20 03:36	01/10/20 19:46	121,4500NH3-H	AT
Phosphorus, Total	120		mg/kg	9.0	--	1.7	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	360		mg/kg	27	--	1.7	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-04
Client ID: LEDGE-4 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 08:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	91.11		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	93.9		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	6.9		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.89	--	1	-	01/09/20 08:34	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	140	--	1	01/10/20 03:36	01/10/20 19:47	121,4500NH3-H	AT
Phosphorus, Total	100		mg/kg	9.0	--	1.7	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	310		mg/kg	27	--	1.7	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-05
Client ID: LEDGE-5 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	53.89		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	92.8		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.0		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.1	--	1	-	01/09/20 08:38	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	140		mg/kg	120	--	1	01/10/20 03:36	01/10/20 19:48	121,4500NH3-H	AT
Phosphorus, Total	150		mg/kg	11	--	2	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	460		mg/kg	32	--	2	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-06
Client ID: LEDGE-6 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:20
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	12.89		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	94.4		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.1		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.5		mg/kg	1.0	--	1	-	01/09/20 08:39	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:36	01/10/20 19:49	121,4500NH3-H	AT
Phosphorus, Total	110		mg/kg	10	--	1.9	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	350		mg/kg	30	--	1.9	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-07
Client ID: LEDGE-7 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 09:40
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	2.08		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	95.2		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.1		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.5		mg/kg	0.93	--	1	-	01/09/20 08:41	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	120	--	1	01/10/20 03:36	01/10/20 19:50	121,4500NH3-H	AT
Phosphorus, Total	81		mg/kg	10	--	1.9	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	250		mg/kg	30	--	1.9	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-08
Client ID: LEDGE-1 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	27.88		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	94.0		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.4		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.6		mg/kg	1.0	--	1	-	01/09/20 08:42	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	180		mg/kg	150	--	1	01/10/20 03:37	01/10/20 21:19	121,4500NH3-H	AT
Phosphorus, Total	170		mg/kg	9.0	--	1.7	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	510		mg/kg	27	--	1.7	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-09
Client ID: LEDGE-2 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	347.96		MPN/gm	2	NA	10	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	93.4		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.2		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.6		mg/kg	0.98	--	1	-	01/09/20 08:43	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	190		mg/kg	120	--	1	01/10/20 03:37	01/10/20 21:22	121,4500NH3-H	AT
Phosphorus, Total	190		mg/kg	11	--	2	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	600		mg/kg	32	--	2	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-10
Client ID: LEDGE-3 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	158.44		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	92.7		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.1		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.95	--	1	-	01/09/20 08:44	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	630		mg/kg	120	--	1	01/10/20 03:37	01/10/20 21:23	121,4500NH3-H	AT
Phosphorus, Total	260		mg/kg	26	--	4.9	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	810		mg/kg	79	--	4.9	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-11
Client ID: LEDGE-4 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 10:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	>=1598.82		MPN/gm	2	NA	10	-	01/08/20 18:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	91.0		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	6.9		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 08:46	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	160		mg/kg	120	--	1	01/10/20 03:37	01/10/20 21:24	121,4500NH3-H	AT
Phosphorus, Total	240		mg/kg	14	--	2.5	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	750		mg/kg	41	--	2.5	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000719-12
Client ID: LEDGE-5 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	1540.67		MPN/gm	2	NA	10	-	01/08/20 18:52	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	91.3		%	0.100	NA	1	-	01/09/20 11:29	121,2540G	RI
pH (H)	7.0		SU	-	NA	1	-	01/08/20 21:35	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 08:47	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	260		mg/kg	100	--	1	01/10/20 03:37	01/10/20 21:25	121,4500NH3-H	AT
Phosphorus, Total	230		mg/kg	24	--	4.4	-	01/09/20 10:20	121,4500P-E	SD
Phosphate, Total	710		mg/kg	72	--	4.4	-	01/09/20 10:20	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP. **Lab Number:** L2000719

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab for sample(s): 11-12 Batch: WG1328086-1										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/08/20 18:52	121,9221B	CO
General Chemistry - Westborough Lab for sample(s): 01-12 Batch: WG1328268-1										
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 07:56	121,4500NO3-F	MR
General Chemistry - Westborough Lab for sample(s): 01-12 Batch: WG1328301-1										
Phosphorus, Total	ND		mg/kg	4.5	--	.9	-	01/09/20 10:20	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-12 Batch: WG1328401-1										
Phosphate, Total	ND		mg/kg	14	--	.9	-	01/09/20 10:20	121,4500P-E(M)	SD
General Chemistry - Westborough Lab for sample(s): 01-07 Batch: WG1328585-1										
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:36	01/10/20 19:22	121,4500NH3-H	AT
General Chemistry - Westborough Lab for sample(s): 08-12 Batch: WG1328586-1										
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:37	01/10/20 21:16	121,4500NH3-H	AT
Microbiological Analysis - Westborough Lab for sample(s): 01-10 Batch: WG1328942-1										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/10/20 19:52	121,9221B	CO

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 Batch: WG1328138-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-12 Batch: WG1328268-2								
Nitrogen, Nitrate/Nitrite	105		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 Batch: WG1328301-2								
Phosphorus, Total	102		-		52-148	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 Batch: WG1328401-2								
Phosphate, Total	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-07 Batch: WG1328585-2								
Nitrogen, Total Kjeldahl	102		-		83-111	-		26
General Chemistry - Westborough Lab Associated sample(s): 08-12 Batch: WG1328586-2								
Nitrogen, Total Kjeldahl	99		-		83-111	-		26

Matrix Spike Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000
Lab Number: L2000719
Report Date: 01/15/20

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): 01-12 QC Batch ID: WG1328268-4 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)												
Nitrogen, Nitrate/Nitrite	ND	81	83	102		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328301-3 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)												
Phosphorus, Total	120	236	390	110		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328401-3 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)												
Phosphate, Total	360	728	1200	120		-	-		75-125	-		25
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1328585-4 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)												
Nitrogen, Total Kjeldahl	ND	3250	3000	92		-	-		43-160	-		26
General Chemistry - Westborough Lab Associated sample(s): 08-12 QC Batch ID: WG1328586-4 QC Sample: L2000719-08 Client ID: LEDGE-1 (GREY)												
Nitrogen, Total Kjeldahl	180	3650	3300	85		-	-		43-160	-		26

Lab Duplicate Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP.

Project Number: 19-2000

Lab Number: L2000719

Report Date: 01/15/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328138-2 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)						
pH (H)	6.8	6.9	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328268-3 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)						
Nitrogen, Nitrate/Nitrite	ND	ND	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328301-4 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)						
Phosphorus, Total	120	130	mg/kg	8		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328343-1 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)						
Solids, Total	93.7	93.7	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1328401-4 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)						
Phosphate, Total	360	390	mg/kg	8		25
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1328585-3 QC Sample: L2000719-01 Client ID: LEDGE-1 (TAN)						
Nitrogen, Total Kjeldahl	ND	ND	mg/kg	NC		26
General Chemistry - Westborough Lab Associated sample(s): 08-12 QC Batch ID: WG1328586-3 QC Sample: L2000719-08 Client ID: LEDGE-1 (GREY)						
Nitrogen, Total Kjeldahl	180	290	mg/kg	**47**	Q	26

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

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(*)
L2000719-01A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-01B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-01C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-01E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-01F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-01G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-01H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-02A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-02B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-02C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-02E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-02F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-02G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-02H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000719-03A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-03B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-03C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-03E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-03F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-03G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-03H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-04A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-04B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-04C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-04E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-04F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-04G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-04H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-05A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-05B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-05C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000719-05D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-05E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-05F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-05G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-05H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-06A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-06B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-06C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-06D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-06E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-06F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-06G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-06H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-07A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-07B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-07C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-07D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-07E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-07F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000719-07G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-07H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-08A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-08B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-08C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-08D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-08E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-08F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-08G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-08H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-09A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-09B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-09C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-09D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-09E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-09F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-09G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-09H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-10A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000719-10B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-10C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-10D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-10E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-10F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-10G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-10H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2000719-11A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-11B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-11C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-11D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000719-11E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-11F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-11G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-11H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-12A	Vial MeOH preserved	A	NA		2.7	Y	Absent		MCP-8260HLW-10(14)
L2000719-12B	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-12C	Vial water preserved	A	NA		2.7	Y	Absent	08-JAN-20 17:24	MCP-8260HLW-10(14)
L2000719-12D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP.
Project Number: 19-2000

Lab Number: L2000719
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000719-12E	Bacteria Cup unpreserved	A	NA		2.7	Y	Absent		T-COLI-MPN(7)
L2000719-12F	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2000719-12G	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2000719-12H	Glass 250ml/8oz unpreserved	A	NA		2.7	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)

*Values in parentheses indicate holding time in days

Project Name:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

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: Data Usability Report

Project Name:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

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.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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. 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 reporting limit (RL) for the sample.

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

Project Name:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

Data Qualifiers

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.

Project Name:	EPSILON ASSOC SAND SAMP.	**Lab Number:**	L2000719
Project Number:	19-2000	**Report Date:**	01/15/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 1/8/20

ALPHA Job #: L2000719

ALPHA
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220
320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: OHI Engineering
Address: 44 Wood Ave
Mansfield, MA
Phone:
Email:

Project Information

Project Name: Epsilon Assoc Sed Samp.
Project Location: Nantucket, MA
Project #: 19-2000
Project Manager: Jim Borgebach
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: 5-Day Turn

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

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 _____

Additional Project Information:

Hold excess soil for future analyses!!

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☒ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA8 ☒ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☒ Quant Only ☐ Fingerprint; Total Zinc; Total Cyanide; NO_3/NO_2; Total Kjeldahl N; Phosphorus / Phosphate; pH

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Total Zinc	Total Cyanide	NO_3/NO_2	Total Kjeldahl N	Phosphorus / Phosphate	pH	Sample Comments	TOTAL # BOTTLES
00719-01	LEDGE-1 (TAN)	01/07/19	0720	Soil	JK	X	X		X				X	X	X	X	X	X	X		
02	LEDGE-2 (TAN)		0740																		
03	LEDGE-3 (TAN)		0800																		
04	LEDGE-4 (TAN)		0830																		
05	LEDGE-5 (TAN)		0900																		
06	LEDGE-6 (TAN)		0920																		
07	LEDGE-7 (TAN)		0940																		
08	LEDGE-1 (GREY)		1000																		
09	LEDGE-2 (GREY)		1015																		
10	LEDGE-3 (GREY)		1030																		
					Container Type	V	A		A				A	A	B	A	A	A	A		
					Preservative	F/O	A		A				A	A	A	A	A	A	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	01/07/19	[signature] AKL	1/8/20 1:24

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 1/8/20

ALPHA Job #: L2000719

ALPHA
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220
320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: OHI Engineering

Address:

Phone:

Email:

Project Information

Project Name: Epsilon Assoc Sand Sump

Project Location: Nantucket, MA

Project #: 19-2000

Project Manager: Jim Barrebach

ALPHA Quote #:

Turn-Around Time

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

Date Due: 5-Day Turn

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

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 _____

Additional Project Information:

Hold excess soil for future analyses!!

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; Total Zinc; Total Chlorine; NO3/NO2; Total Kjeldahl N; Phosphorus / Phosphate; pH

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Total Zinc	Total Chlorine	NO3/NO2	Total Kjeldahl N	Phosphorus / Phosphate	pH	Sample Comments	TOTAL # BOTTLES
00719-11	LEDGE-4 (Grey)	01/07/19	1045	Soil	JH	X	X		X				X	→	→	→	→	→	→		
12	LEDGE-5 (Grey)	01/07/19	1300	Soil	JH	X	X		X				X	→	→	→	→	→	→		
Container Type						V	A		A				A	A	B	A	A	A	A		
Preservative						F/O	A		A				A	A	A	A	A	A	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	01/07/19	[signature] AR	1/8/20 1124

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

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

ORIGIN ID:ACKA (774) 891-3285
JARED KELLY
-O.H.I. ENGNEERING
11 LAUREL LN

WARREN, RI 02885
UNITED STATES US

SHIP DATE: 07JAN20
ACTWGT: 60.50 LB
CAD: 6993647/SSFE2021
DIMS: 25x14x14 IN

BILL CREDIT CARD

Part # 150257-258/RRD/22 Exp 10/20

TO ALPHA ANALYTICAL
ALPHA ANALYTICAL
8 WALKUP DR

WESTBOROUGH MA 01581

(508) 898-9220 REF:
INV:
PO: DEPT:

FedEx Express

J1921190911281UF

2 of 2

MPS# 0263 7794 9881 1344

Mstr# 7794 9881 1333

0201

WED - 08 JAN 3:00P
STANDARD OVERNIGHT

01 BBFA

01581
MA-US BOS

Method Blank Summary
Form 4
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	**Project Number**	: 19-2000
Lab Sample ID	: WG1329096-5	**Lab File ID**	: V26200110A03
Instrument ID	: VOA126		
Matrix	: SOIL	**Analysis Date**	: 01/10/20 11:25

Client Sample No.	Lab Sample ID	Analysis Date
WG1329096-3LCS	WG1329096-3	01/10/20 10:07
WG1329096-4LCSD	WG1329096-4	01/10/20 10:46
LEDGE-2 (GREY)	L2000719-09	01/10/20 12:44
LEDGE-3 (GREY)	L2000719-10	01/10/20 13:23
LEDGE-4 (GREY)	L2000719-11	01/10/20 14:02
LEDGE-5 (GREY)	L2000719-12	01/10/20 14:42

Method Blank Summary
Form 4
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	**Project Number**	: 19-2000
Lab Sample ID	: WG1328935-5	**Lab File ID**	: VC200110A04
Instrument ID	: CHARLIE		
Matrix	: SOIL	**Analysis Date**	: 01/10/20 11:32

Client Sample No.	Lab Sample ID	Analysis Date
WG1328935-3LCS	WG1328935-3	01/10/20 10:09
WG1328935-4LCSD	WG1328935-4	01/10/20 11:04
LEDGE-1 (TAN)	L2000719-01	01/10/20 18:24
LEDGE-2 (TAN)	L2000719-02	01/10/20 18:52
LEDGE-3 (TAN)	L2000719-03	01/10/20 19:19
LEDGE-4 (TAN)	L2000719-04	01/10/20 19:47
LEDGE-5 (TAN)	L2000719-05	01/10/20 20:15
LEDGE-6 (TAN)	L2000719-06	01/10/20 20:43
LEDGE-7 (TAN)	L2000719-07	01/10/20 21:10

Method Blank Summary
Form 4
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	**Project Number**	: 19-2000
Lab Sample ID	: WG1329461-5	**Lab File ID**	: VC200111A05
Instrument ID	: CHARLIE		
Matrix	: SOIL	**Analysis Date**	: 01/11/20 08:46

Client Sample No.	Lab Sample ID	Analysis Date
WG1329461-3LCS	WG1329461-3	01/11/20 07:24
WG1329461-4LCSD	WG1329461-4	01/11/20 07:52
LEDGE-1 (GREY)	L2000719-08	01/11/20 13:48

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: VOA126	Calibration Date	: 01/10/20 10:07
Lab File ID	: V26200110A01	Init. Calib. Date(s)	: 01/02/20 01/03/20
Sample No	: WG1329096-2	Init. Calib. Times	: 20:13 01:28
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	62	-.02
Dichlorodifluoromethane	0.223	0.178	-	20.2*	20	48	0
Chloromethane	0.355	0.22	-	38*	20	40	0
Vinyl chloride	0.229	0.194	-	15.3	20	47	0
Bromomethane	0.147	0.123	-	16.3	20	54	0
Chloroethane	0.155	0.127	-	18.1	20	47	-.02
Trichlorofluoromethane	0.291	0.279	-	4.1	20	57	-.02
Ethyl ether	0.109	0.097	-	11	20	51	-.02
1,1-Dichloroethene	0.167	0.149	-	10.8	20	53	-.01
Carbon disulfide	0.662	0.493	-	25.5*	20	48	-.01
Freon-113	0.173	0.158	-	8.7	20	54	-.01
Acrolein	0.044	0.04*	-	9.1	20	50	-.01
Methylene chloride	0.212	0.178	-	16	20	52	-.01
Acetone	40	26.098	-	34.8*	20	38	0
trans-1,2-Dichloroethene	0.194	0.174	-	10.3	20	53	-.02
Methyl acetate	0.197	0.158	-	19.8	20	47	-.03
Methyl tert-butyl ether	0.546	0.525	-	3.8	20	55	-.03
tert-Butyl alcohol	0.025	0.025*	-	0	20	54	-.03
Diisopropyl ether	0.883	0.734	-	16.9	20	48	-.02
1,1-Dichloroethane	0.41	0.359	-	12.4	20	52	-.02
Halothane	0.142	0.137	-	3.5	20	58	-.02
Acrylonitrile	0.086	0.079	-	8.1	20	53	0
Ethyl tert-butyl ether	0.696	0.676	-	2.9	20	56	-.02
Vinyl acetate	0.509	0.415	-	18.5	20	47	-.01
cis-1,2-Dichloroethene	0.212	0.187	-	11.8	20	53	-.02
2,2-Dichloropropane	0.286	0.28	-	2.1	20	58	-.02
Bromochloromethane	0.092	0.092	-	0	20	58	-.01
Cyclohexane	0.42	0.359	-	14.5	20	49	0
Chloroform	0.359	0.33	-	8.1	20	55	-.02
Ethyl acetate	0.224	0.187	-	16.5	20	48	-.02
Carbon tetrachloride	0.26	0.268	-	-3.1	20	60	-.02
Tetrahydrofuran	0.079	0.061	-	22.8*	20	46	-.03
Dibromofluoromethane	0.258	0.275	-	-6.6	20	65	-.02
1,1,1-Trichloroethane	0.3	0.3	-	0	20	59	-.01
2-Butanone	0.111	0.094*	-	15.3	20	48	-.03
1,1-Dichloropropene	0.269	0.241	-	10.4	20	53	-.02
Benzene	0.825	0.68	-	17.6	20	50	-.02
tert-Amyl methyl ether	0.544	0.51	-	6.3	20	53	-.03
1,2-Dichloroethane-d4	0.31	0.319	-	-2.9	20	63	-.02
1,2-Dichloroethane	0.294	0.286	-	2.7	20	58	-.02
Methyl cyclohexane	0.323	0.274	-	15.2	20	49	-.02
Trichloroethene	0.196	0.183*	-	6.6	20	56	-.03
Dibromomethane	0.113	0.107	-	5.3	20	56	-.02

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: VOA126	Calibration Date	: 01/10/20 10:07
Lab File ID	: V26200110A01	Init. Calib. Date(s)	: 01/02/20 01/03/20
Sample No	: WG1329096-2	Init. Calib. Times	: 20:13 01:28
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.235	0.203	-	13.6	20	50	-.02
2-Chloroethyl vinyl ether	0.128	0.107	-	16.4	20	49	-.02
Bromodichloromethane	0.272	0.26	-	4.4	20	55	-.02
1,4-Dioxane	0.00209	0.00195*	-	6.7	20	51	-.03
cis-1,3-Dichloropropene	0.306	0.287	-	6.2	20	53	-.02
Chlorobenzene-d5	1	1	-	0	20	65	-.02
Toluene-d8	1.377	1.303	-	5.4	20	62	-.02
Toluene	0.657	0.547	-	16.7	20	53	-.02
4-Methyl-2-pentanone	0.114	0.101	-	11.4	20	50	-.02
Tetrachloroethene	0.264	0.241	-	8.7	20	60	-.02
trans-1,3-Dichloropropene	0.357	0.323	-	9.5	20	55	-.02
Ethyl methacrylate	0.325	0.273	-	16	20	49	-.02
1,1,2-Trichloroethane	0.183	0.153	-	16.4	20	52	-.02
Chlorodibromomethane	0.243	0.242	-	0.4	20	59	-.02
1,3-Dichloropropane	0.38	0.318	-	16.3	20	52	-.02
1,2-Dibromoethane	0.197	0.186	-	5.6	20	57	-.01
2-Hexanone	0.221	0.181	-	18.1	20	47	-.02
Chlorobenzene	0.712	0.624	-	12.4	20	56	-.02
Ethylbenzene	1.233	1.072	-	13.1	20	54	-.01
1,1,1,2-Tetrachloroethane	0.244	0.237	-	2.9	20	59	-.01
p/m Xylene	0.454	0.408	-	10.1	20	56	-.02
o Xylene	0.428	0.394	-	7.9	20	57	-.02
Styrene	0.715	0.679	-	5	20	59	-.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	68	-.02
Bromoform	0.297	0.285	-	4	20	60	-.03
Isopropylbenzene	2.281	1.984	-	13	20	60	-.02
4-Bromofluorobenzene	1.015	0.969	-	4.5	20	65	-.02
Bromobenzene	0.565	0.497	-	12	20	58	-.01
n-Propylbenzene	2.822	2.325	-	17.6	20	53	-.01
1,4-Dichlorobutane	0.883	0.748	-	15.3	20	58	-.01
1,1,2,2-Tetrachloroethane	0.542	0.429	-	20.8*	20	49	-.01
4-Ethyltoluene	2.346	2.013	-	14.2	20	55	-.02
2-Chlorotoluene	1.865	1.544	-	17.2	20	54	-.02
1,3,5-Trimethylbenzene	1.922	1.676	-	12.8	20	56	-.02
1,2,3-Trichloropropane	0.432	0.344	-	20.4*	20	50	-.02
trans-1,4-Dichloro-2-buten	0.188	0.164	-	12.8	20	53	-.01
4-Chlorotoluene	1.733	1.45	-	16.3	20	54	-.02
tert-Butylbenzene	1.611	1.442	-	10.5	20	56	-.01
1,2,4-Trimethylbenzene	1.907	1.683	-	11.7	20	56	-.02
sec-Butylbenzene	2.436	2.105	-	13.6	20	54	-.02
p-Isopropyltoluene	2.093	1.865	-	10.9	20	56	-.02
1,3-Dichlorobenzene	1.105	0.971	-	12.1	20	57	-.02
1,4-Dichlorobenzene	1.108	0.972	-	12.3	20	57	-.01

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: VOA126	Calibration Date	: 01/10/20 10:07
Lab File ID	: V26200110A01	Init. Calib. Date(s)	: 01/02/20 01/03/20
Sample No	: WG1329096-2	Init. Calib. Times	: 20:13 01:28
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.328	1.182	-	11	20	56	-.01
n-Butylbenzene	2.454	2.067	-	15.8	20	53	-.01
1,2-Dichlorobenzene	1.007	0.89	-	11.6	20	56	-.01
1,2,4,5-Tetramethylbenzene	2.026	1.827	-	9.8	20	56	-.01
1,2-Dibromo-3-chloropropan	0.086	0.081	-	5.8	20	58	-.02
1,3,5-Trichlorobenzene	0.786	0.742	-	5.6	20	60	-.02
Hexachlorobutadiene	0.377	0.35	-	7.2	20	62	0
1,2,4-Trichlorobenzene	0.691	0.662	-	4.2	20	60	-.01
Naphthalene	1.631	1.503	-	7.8	20	55	0
1,2,3-Trichlorobenzene	0.638	0.605	-	5.2	20	60	-.01

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/10/20 10:09
Lab File ID	: VC200110A01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1328935-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	118	0
Dichlorodifluoromethane	0.394	0.297	-	24.6*	20	87	.01
Chloromethane	0.451	0.377	-	16.4	20	100	.02
Vinyl chloride	0.562	0.472	-	16	20	95	.02
Bromomethane	0.277	0.238	-	14.1	20	123	.01
Chloroethane	0.395	0.351	-	11.1	20	98	.01
Trichlorofluoromethane	0.717	0.613	-	14.5	20	94	.02
Ethyl ether	0.314	0.279	-	11.1	20	101	.01
1,1-Dichloroethene	0.317	0.338	-	-6.6	20	115	.01
Carbon disulfide	1.075	1.153	-	-7.3	20	125	.02
Freon-113	0.336	0.353	-	-5.1	20	118	.01
Acrolein	0.084	0.087	-	-3.6	20	109	.01
Methylene chloride	0.419	0.359	-	14.3	20	103	0
Acetone	0.137	0.125	-	8.8	20	112	0
trans-1,2-Dichloroethene	0.352	0.317	-	9.9	20	102	0
Methyl acetate	0.331	0.32	-	3.3	20	106	0
Methyl tert-butyl ether	1.12	1.054	-	5.9	20	104	0
tert-Butyl alcohol	0.057	0.057	-	0	20	109	0
Diisopropyl ether	1.473	1.405	-	4.6	20	104	0
1,1-Dichloroethane	0.789	0.71	-	10	20	101	0
Halothane	0.263	0.236	-	10.3	20	101	0
Acrylonitrile	0.155	0.154	-	0.6	20	112	0
Ethyl tert-butyl ether	1.453	1.384	-	4.7	20	105	0
Vinyl acetate	1.122	1.147	-	-2.2	20	106	0
cis-1,2-Dichloroethene	0.398	0.364	-	8.5	20	100	0
2,2-Dichloropropane	0.534	0.489	-	8.4	20	102	0
Bromochloromethane	0.191	0.18	-	5.8	20	101	0
Cyclohexane	0.719	0.61	-	15.2	20	95	0
Chloroform	0.689	0.618	-	10.3	20	100	0
Ethyl acetate	0.432	0.433	-	-0.2	20	104	0
Carbon tetrachloride	0.502	0.439	-	12.5	20	99	0
Tetrahydrofuran	0.137	0.137	-	0	20	100	0
Dibromofluoromethane	0.299	0.294	-	1.7	20	116	0
1,1,1-Trichloroethane	0.555	0.494	-	11	20	99	0
2-Butanone	0.209	0.196	-	6.2	20	97	0
1,1-Dichloropropene	0.47	0.425	-	9.6	20	99	0
Benzene	1.464	1.304	-	10.9	20	100	0
tert-Amyl methyl ether	1.096	1.043	-	4.8	20	104	0
1,2-Dichloroethane-d4	0.326	0.315	-	3.4	20	116	0
1,2-Dichloroethane	0.626	0.577	-	7.8	20	102	0
Methyl cyclohexane	0.576	0.492	-	14.6	20	94	0
Trichloroethene	0.363	0.33	-	9.1	20	99	0
Dibromomethane	0.252	0.242	-	4	20	102	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/10/20 10:09
Lab File ID	: VC200110A01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1328935-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.449	0.415	-	7.6	20	101	0
2-Chloroethyl vinyl ether	0.265	0.256	-	3.4	20	104	0
Bromodichloromethane	0.524	0.507	-	3.2	20	101	0
1,4-Dioxane	0.00475	0.00465*	-	2.1	20	106	0
cis-1,3-Dichloropropene	40	34.716	-	13.2	20	102	0
Chlorobenzene-d5	1	1	-	0	20	125	0
Toluene-d8	1.305	1.261	-	3.4	20	121	-.01
Toluene	1.14	0.965	-	15.4	20	100	0
4-Methyl-2-pentanone	0.237	0.214	-	9.7	20	105	0
Tetrachloroethene	0.433	0.374	-	13.6	20	99	0
trans-1,3-Dichloropropene	40	33.415	-	16.5	20	104	-.01
Ethyl methacrylate	0.659	0.579	-	12.1	20	103	-.01
1,1,2-Trichloroethane	0.377	0.339	-	10.1	20	103	0
Chlorodibromomethane	0.492	0.467	-	5.1	20	102	0
1,3-Dichloropropane	0.763	0.678	-	11.1	20	102	-.01
1,2-Dibromoethane	0.426	0.397	-	6.8	20	102	0
2-Hexanone	0.399	0.357	-	10.5	20	103	0
Chlorobenzene	1.329	1.146	-	13.8	20	102	0
Ethylbenzene	2.187	1.885	-	13.8	20	101	0
1,1,1,2-Tetrachloroethane	0.468	0.422	-	9.8	20	100	-.01
p/m Xylene	0.822	0.731	-	11.1	20	101	0
o Xylene	0.812	0.735	-	9.5	20	102	0
Styrene	80	63.466	-	20.7*	20	101	-.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	128	0
Bromoform	0.633	0.548	-	13.4	20	104	0
Isopropylbenzene	3.863	3.217	-	16.7	20	102	0
4-Bromofluorobenzene	1	0.968	-	3.2	20	129	0
Bromobenzene	1.034	0.848	-	18	20	102	0
n-Propylbenzene	4.892	3.977	-	18.7	20	101	0
1,4-Dichlorobutane	1.785	1.517	-	15	20	102	0
1,1,2,2-Tetrachloroethane	1.164	1.01	-	13.2	20	104	0
4-Ethyltoluene	4.029	3.369	-	16.4	20	103	0
2-Chlorotoluene	2.968	2.388	-	19.5	20	101	0
1,3,5-Trimethylbenzene	3.427	2.825	-	17.6	20	102	0
1,2,3-Trichloropropane	0.96	0.789	-	17.8	20	105	0
trans-1,4-Dichloro-2-buten	0.385	0.349	-	9.4	20	104	0
4-Chlorotoluene	3.073	2.512	-	18.3	20	103	0
tert-Butylbenzene	2.745	2.274	-	17.2	20	102	0
1,2,4-Trimethylbenzene	3.364	2.874	-	14.6	20	104	0
sec-Butylbenzene	4.306	3.518	-	18.3	20	101	0
p-Isopropyltoluene	3.556	2.984	-	16.1	20	102	0
1,3-Dichlorobenzene	1.968	1.662	-	15.5	20	104	0
1,4-Dichlorobenzene	2.076	1.713	-	17.5	20	104	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/10/20 10:09
Lab File ID	: VC200110A01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1328935-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	2.129	1.842	-	13.5	20	104	0
n-Butylbenzene	3.549	2.93	-	17.4	20	101	0
1,2-Dichlorobenzene	1.901	1.599	-	15.9	20	104	0
1,2,4,5-Tetramethylbenzene	3.5	3.102	-	11.4	20	106	0
1,2-Dibromo-3-chloropropan	40	32.212	-	19.5	20	108	0
1,3,5-Trichlorobenzene	1.407	1.2	-	14.7	20	105	0
Hexachlorobutadiene	0.571	0.459	-	19.6	20	103	0
1,2,4-Trichlorobenzene	1.271	1.139	-	10.4	20	110	0
Naphthalene	3.217	3	-	6.7	20	112	0
1,2,3-Trichlorobenzene	1.231	1.063	-	13.6	20	109	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/11/20 07:24
Lab File ID	: VC200111A02	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1329461-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	96	0
Dichlorodifluoromethane	0.394	0.386	-	2	20	92	0
Chloromethane	0.451	0.502	-	-11.3	20	109	0
Vinyl chloride	0.562	0.601	-	-6.9	20	99	0
Bromomethane	0.277	0.284	-	-2.5	20	120	0
Chloroethane	0.395	0.448	-	-13.4	20	102	0
Trichlorofluoromethane	0.717	0.803	-	-12	20	100	0
Ethyl ether	0.314	0.314	-	0	20	92	0
1,1-Dichloroethene	0.317	0.424	-	-33.8*	20	117	0
Carbon disulfide	1.075	1.269	-	-18	20	112	0
Freon-113	0.336	0.4	-	-19	20	109	0
Acrolein	0.084	0.092	-	-9.5	20	94	0
Methylene chloride	0.419	0.418	-	0.2	20	98	0
Acetone	0.137	0.13	-	5.1	20	95	0
trans-1,2-Dichloroethene	0.352	0.384	-	-9.1	20	100	0
Methyl acetate	0.331	0.339	-	-2.4	20	92	0
Methyl tert-butyl ether	1.12	1.158	-	-3.4	20	93	0
tert-Butyl alcohol	0.057	0.059	-	-3.5	20	91	0
Diisopropyl ether	1.473	1.625	-	-10.3	20	98	0
1,1-Dichloroethane	0.789	0.849	-	-7.6	20	98	0
Halothane	0.263	0.291	-	-10.6	20	101	0
Acrylonitrile	0.155	0.163	-	-5.2	20	96	0
Ethyl tert-butyl ether	1.453	1.561	-	-7.4	20	96	0
Vinyl acetate	1.122	1.236	-	-10.2	20	93	0
cis-1,2-Dichloroethene	0.398	0.44	-	-10.6	20	98	0
2,2-Dichloropropane	0.534	0.597	-	-11.8	20	101	0
Bromochloromethane	0.191	0.208	-	-8.9	20	95	0
Cyclohexane	0.719	0.808	-	-12.4	20	102	0
Chloroform	0.689	0.728	-	-5.7	20	96	0
Ethyl acetate	0.432	0.451	-	-4.4	20	88	0
Carbon tetrachloride	0.502	0.553	-	-10.2	20	101	0
Tetrahydrofuran	0.137	0.141	-	-2.9	20	83	0
Dibromofluoromethane	0.299	0.295	-	1.3	20	95	0
1,1,1-Trichloroethane	0.555	0.613	-	-10.5	20	100	0
2-Butanone	0.209	0.204	-	2.4	20	82	0
1,1-Dichloropropene	0.47	0.53	-	-12.8	20	101	0
Benzene	1.464	1.564	-	-6.8	20	97	0
tert-Amyl methyl ether	1.096	1.155	-	-5.4	20	93	0
1,2-Dichloroethane-d4	0.326	0.311	-	4.6	20	93	0
1,2-Dichloroethane	0.626	0.659	-	-5.3	20	95	0
Methyl cyclohexane	0.576	0.644	-	-11.8	20	100	0
Trichloroethene	0.363	0.406	-	-11.8	20	99	0
Dibromomethane	0.252	0.27	-	-7.1	20	92	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/11/20 07:24
Lab File ID	: VC200111A02	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1329461-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.449	0.49	-	-9.1	20	97	0
2-Chloroethyl vinyl ether	0.265	0.264	-	0.4	20	87	0
Bromodichloromethane	0.524	0.587	-	-12	20	95	0
1,4-Dioxane	0.00475	0.00442*	-	6.9	20	82	0
cis-1,3-Dichloropropene	40	40.014	-	-0	20	95	0
Chlorobenzene-d5	1	1	-	0	20	102	0
Toluene-d8	1.305	1.262	-	3.3	20	98	0
Toluene	1.14	1.156	-	-1.4	20	98	0
4-Methyl-2-pentanone	0.237	0.218	-	8	20	87	0
Tetrachloroethene	0.433	0.46	-	-6.2	20	99	0
trans-1,3-Dichloropropene	40	37.055	-	7.4	20	94	0
Ethyl methacrylate	0.659	0.612	-	7.1	20	89	0
1,1,2-Trichloroethane	0.377	0.377	-	0	20	93	0
Chlorodibromomethane	0.492	0.523	-	-6.3	20	93	0
1,3-Dichloropropane	0.763	0.76	-	0.4	20	93	0
1,2-Dibromoethane	0.426	0.436	-	-2.3	20	91	0
2-Hexanone	0.399	0.363	-	9	20	85	0
Chlorobenzene	1.329	1.335	-	-0.5	20	96	0
Ethylbenzene	2.187	2.263	-	-3.5	20	98	0
1,1,1,2-Tetrachloroethane	0.468	0.492	-	-5.1	20	95	0
p/m Xylene	0.822	0.875	-	-6.4	20	99	0
o Xylene	0.812	0.864	-	-6.4	20	97	0
Styrene	80	74.362	-	7	20	97	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	104	0
Bromoform	0.633	0.607	-	4.1	20	93	0
Isopropylbenzene	3.863	3.894	-	-0.8	20	100	0
4-Bromofluorobenzene	1	0.965	-	3.5	20	104	0
Bromobenzene	1.034	1.001	-	3.2	20	97	0
n-Propylbenzene	4.892	4.89	-	0	20	100	0
1,4-Dichlorobutane	1.785	1.704	-	4.5	20	93	0
1,1,2,2-Tetrachloroethane	1.164	1.096	-	5.8	20	91	0
4-Ethyltoluene	4.029	4.08	-	-1.3	20	100	0
2-Chlorotoluene	2.968	2.875	-	3.1	20	98	0
1,3,5-Trimethylbenzene	3.427	3.391	-	1.1	20	99	0
1,2,3-Trichloropropane	0.96	0.837	-	12.8	20	90	0
trans-1,4-Dichloro-2-buten	0.385	0.374	-	2.9	20	90	0
4-Chlorotoluene	3.073	2.97	-	3.4	20	98	0
tert-Butylbenzene	2.745	2.775	-	-1.1	20	100	0
1,2,4-Trimethylbenzene	3.364	3.422	-	-1.7	20	100	0
sec-Butylbenzene	4.306	4.333	-	-0.6	20	101	0
p-Isopropyltoluene	3.556	3.663	-	-3	20	101	0
1,3-Dichlorobenzene	1.968	1.968	-	0	20	100	0
1,4-Dichlorobenzene	2.076	2.009	-	3.2	20	99	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000719
Project Name	: EPSILON ASSOC SAND SAMP.	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/11/20 07:24
Lab File ID	: VC200111A02	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1329461-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	2.129	2.24	-	-5.2	20	102	0
n-Butylbenzene	3.549	3.636	-	-2.5	20	101	0
1,2-Dichlorobenzene	1.901	1.859	-	2.2	20	97	0
1,2,4,5-Tetramethylbenzene	3.5	3.648	-	-4.2	20	101	0
1,2-Dibromo-3-chloropropan	40	32.996	-	17.5	20	89	0
1,3,5-Trichlorobenzene	1.407	1.43	-	-1.6	20	101	0
Hexachlorobutadiene	0.571	0.563	-	1.4	20	102	0
1,2,4-Trichlorobenzene	1.271	1.284	-	-1	20	100	0
Naphthalene	3.217	3.103	-	3.5	20	94	0
1,2,3-Trichlorobenzene	1.231	1.203	-	2.3	20	100	0

* Value outside of QC limits.

ANALYTICAL REPORT

Lab Number:	L2000718
Client:	OHI Engineering Incorporated 44 Wood Avenue Mansfield, MA 02048
ATTN:	James Borrebach
Phone:	(508) 339-3929
Project Name:	EPSILON ASSOC SAND SAMP
Project Number:	19-2000
Report Date:	01/15/20

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: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2000718-01	BEACH-1	SOIL	NANTUCKET, MA	01/07/20 11:00	01/08/20
L2000718-02	BEACH-2	SOIL	NANTUCKET, MA	01/07/20 11:15	01/08/20
L2000718-03	BEACH-3	SOIL	NANTUCKET, MA	01/07/20 11:30	01/08/20
L2000718-04	BEACH-4	SOIL	NANTUCKET, MA	01/07/20 11:45	01/08/20
L2000718-05	BEACH-5	SOIL	NANTUCKET, MA	01/07/20 12:00	01/08/20
L2000718-06	BEACH-6	SOIL	NANTUCKET, MA	01/07/20 12:15	01/08/20
L2000718-07	BEACH-7	SOIL	NANTUCKET, MA	01/07/20 12:30	01/08/20
L2000718-08	BEACH-8	SOIL	NANTUCKET, MA	01/07/20 12:45	01/08/20
L2000718-09	LEDGE-8 (TAN)	SOIL	NANTUCKET, MA	01/07/20 13:15	01/08/20
L2000718-10	LEDGE-6 (GREY)	SOIL	NANTUCKET, MA	01/07/20 13:30	01/08/20

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

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:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Volatile Organics

L2000718-10: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

In reference to question G:

L2000718-10: One or more of the target analytes did not achieve the requested CAM reporting limits.

The initial calibration, associated with L2000718-10, utilized a quadratic fit for bromomethane.

In reference to question H:

The WG1329009-5 Method Blank, associated with L2000718-10, has a concentration above the reporting limit for bromomethane. Since the sample was non-detect to the RL for this target analyte, no further actions were taken. The results of the original analysis are reported.

The initial calibration, associated with L2000718-01 through -09, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0033), as well as the average response factor for 1,4-dioxane.

The initial calibration, associated with L2000718-10, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0042), as well as the average response factor for 1,4-dioxane.

The continuing calibration standards, associated with L2000718-01 through -10, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. A copy of the continuing calibration standards is included as an addendum to this report.

PAHs

In reference to question I:

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

Case Narrative (continued)

All samples were analyzed for a subset of MCP analytes per client request.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request

Non-MCP Related Narratives

Sample Receipt

L2000718-07: The container for the Petroleum Hydrocarbon Quantitation analysis was received broken; however, there was adequate sample remaining to perform the requested analysis.

Coliform, Total (MPN)

L2000718-07, -08, and -10: The result is estimated due to the elevated concentration in the sample. Due to the expiration of the method required holding time, re-analysis could not be performed.

Phosphorus, Total

The WG1328300-4 Laboratory Duplicate RPD for phosphorus, total (22%), performed on L2000718-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

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: 01/15/20

QC OUTLIER SUMMARY REPORT

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2000718

Report Date: 01/15/20

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics by EPA 5035 High - Westborough Lab								
8260C	Batch QC	WG1329009-3	Bromomethane	LCS	135	70-130	10	potential high bias
MCP Volatile Organics by EPA 5035 Low - Westborough Lab								
8260C	Batch QC	WG1328935-4	1,1-Dichloroethene	LCSD	28	20	01-09	non-directional bias
8260C	Batch QC	WG1328935-4	Carbon disulfide	LCSD	29	20	01-09	non-directional bias
General Chemistry - Westborough Lab								
4500P-E	Batch QC (L2000718-01)	WG1328300-4	Phosphorus, Total	Duplicate	22	20	01-10	non-directional bias

ORGANICS

VOLATILES

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01
Client ID: BEACH-1
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 14:16
Analyst: NLK
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.1	--	1
1,1-Dichloroethane	ND		ug/kg	1.2	--	1
Chloroform	ND		ug/kg	1.8	--	1
Carbon tetrachloride	ND		ug/kg	1.2	--	1
1,2-Dichloropropane	ND		ug/kg	1.2	--	1
Dibromochloromethane	ND		ug/kg	1.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	--	1
Tetrachloroethene	ND		ug/kg	0.61	--	1
Chlorobenzene	ND		ug/kg	0.61	--	1
Trichlorofluoromethane	ND		ug/kg	4.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.61	--	1
Bromodichloromethane	ND		ug/kg	0.61	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.61	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.61	--	1
1,1-Dichloropropene	ND		ug/kg	0.61	--	1
Bromoform	ND		ug/kg	4.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.61	--	1
Benzene	ND		ug/kg	0.61	--	1
Toluene	ND		ug/kg	1.2	--	1
Ethylbenzene	ND		ug/kg	1.2	--	1
Chloromethane	ND		ug/kg	4.9	--	1
Bromomethane	ND		ug/kg	2.4	--	1
Vinyl chloride	ND		ug/kg	1.2	--	1
Chloroethane	ND		ug/kg	2.4	--	1
1,1-Dichloroethene	ND		ug/kg	1.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01 Date Collected: 01/07/20 11:00

Client ID: BEACH-1 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.61	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	--	1
Methyl tert butyl ether	ND		ug/kg	2.4	--	1
p/m-Xylene	ND		ug/kg	2.4	--	1
o-Xylene	ND		ug/kg	1.2	--	1
Xylenes, Total	ND		ug/kg	1.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	--	1
Dibromomethane	ND		ug/kg	2.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.4	--	1
Styrene	ND		ug/kg	1.2	--	1
Dichlorodifluoromethane	ND		ug/kg	12	--	1
Acetone	ND		ug/kg	30	--	1
Carbon disulfide	ND		ug/kg	12	--	1
Methyl ethyl ketone	ND		ug/kg	12	--	1
Methyl isobutyl ketone	ND		ug/kg	12	--	1
2-Hexanone	ND		ug/kg	12	--	1
Bromochloromethane	ND		ug/kg	2.4	--	1
Tetrahydrofuran	ND		ug/kg	4.9	--	1
2,2-Dichloropropane	ND		ug/kg	2.4	--	1
1,2-Dibromoethane	ND		ug/kg	1.2	--	1
1,3-Dichloropropane	ND		ug/kg	2.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.61	--	1
Bromobenzene	ND		ug/kg	2.4	--	1
n-Butylbenzene	ND		ug/kg	1.2	--	1
sec-Butylbenzene	ND		ug/kg	1.2	--	1
tert-Butylbenzene	ND		ug/kg	2.4	--	1
o-Chlorotoluene	ND		ug/kg	2.4	--	1
p-Chlorotoluene	ND		ug/kg	2.4	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.6	--	1
Hexachlorobutadiene	ND		ug/kg	4.9	--	1
Isopropylbenzene	ND		ug/kg	1.2	--	1
p-Isopropyltoluene	ND		ug/kg	1.2	--	1
Naphthalene	ND		ug/kg	4.9	--	1
n-Propylbenzene	ND		ug/kg	1.2	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01 Date Collected: 01/07/20 11:00

Client ID: BEACH-1 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.4	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.4	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.4	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.4	--	1
Diethyl ether	ND		ug/kg	2.4	--	1
Diisopropyl Ether	ND		ug/kg	2.4	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.4	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.4	--	1
1,4-Dioxane	ND		ug/kg	98	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	99		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02
Client ID: BEACH-2
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 14:44
Analyst: MKS
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.9	--	1
1,1-Dichloroethane	ND		ug/kg	1.4	--	1
Chloroform	ND		ug/kg	2.1	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	1.4	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	--	1
Tetrachloroethene	ND		ug/kg	0.69	--	1
Chlorobenzene	ND		ug/kg	0.69	--	1
Trichlorofluoromethane	ND		ug/kg	5.5	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.69	--	1
Bromodichloromethane	ND		ug/kg	0.69	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.69	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.69	--	1
1,1-Dichloropropene	ND		ug/kg	0.69	--	1
Bromoform	ND		ug/kg	5.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.69	--	1
Benzene	ND		ug/kg	0.69	--	1
Toluene	ND		ug/kg	1.4	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	5.5	--	1
Bromomethane	ND		ug/kg	2.8	--	1
Vinyl chloride	ND		ug/kg	1.4	--	1
Chloroethane	ND		ug/kg	2.8	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02 Date Collected: 01/07/20 11:15

Client ID: BEACH-2 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.69	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.8	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.8	--	1
Methyl tert butyl ether	ND		ug/kg	2.8	--	1
p/m-Xylene	ND		ug/kg	2.8	--	1
o-Xylene	ND		ug/kg	1.4	--	1
Xylenes, Total	ND		ug/kg	1.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	2.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.8	--	1
Styrene	ND		ug/kg	1.4	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	34	--	1
Carbon disulfide	ND		ug/kg	14	--	1
Methyl ethyl ketone	ND		ug/kg	14	--	1
Methyl isobutyl ketone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Bromochloromethane	ND		ug/kg	2.8	--	1
Tetrahydrofuran	ND		ug/kg	5.5	--	1
2,2-Dichloropropane	ND		ug/kg	2.8	--	1
1,2-Dibromoethane	ND		ug/kg	1.4	--	1
1,3-Dichloropropane	ND		ug/kg	2.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.69	--	1
Bromobenzene	ND		ug/kg	2.8	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	2.8	--	1
o-Chlorotoluene	ND		ug/kg	2.8	--	1
p-Chlorotoluene	ND		ug/kg	2.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.1	--	1
Hexachlorobutadiene	ND		ug/kg	5.5	--	1
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	5.5	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02 Date Collected: 01/07/20 11:15

Client ID: BEACH-2 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.8	--	1
Diethyl ether	ND		ug/kg	2.8	--	1
Diisopropyl Ether	ND		ug/kg	2.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.8	--	1
1,4-Dioxane	ND		ug/kg	110	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03
Client ID: BEACH-3
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 15:11
Analyst: MKS
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.7	--	1
1,1-Dichloroethane	ND		ug/kg	0.94	--	1
Chloroform	ND		ug/kg	1.4	--	1
Carbon tetrachloride	ND		ug/kg	0.94	--	1
1,2-Dichloropropane	ND		ug/kg	0.94	--	1
Dibromochloromethane	ND		ug/kg	0.94	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.94	--	1
Tetrachloroethene	ND		ug/kg	0.47	--	1
Chlorobenzene	ND		ug/kg	0.47	--	1
Trichlorofluoromethane	ND		ug/kg	3.8	--	1
1,2-Dichloroethane	ND		ug/kg	0.94	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.47	--	1
Bromodichloromethane	ND		ug/kg	0.47	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.94	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.47	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.47	--	1
1,1-Dichloropropene	ND		ug/kg	0.47	--	1
Bromoform	ND		ug/kg	3.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.47	--	1
Benzene	ND		ug/kg	0.47	--	1
Toluene	ND		ug/kg	0.94	--	1
Ethylbenzene	ND		ug/kg	0.94	--	1
Chloromethane	ND		ug/kg	3.8	--	1
Bromomethane	ND		ug/kg	1.9	--	1
Vinyl chloride	ND		ug/kg	0.94	--	1
Chloroethane	ND		ug/kg	1.9	--	1
1,1-Dichloroethene	ND		ug/kg	0.94	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03 Date Collected: 01/07/20 11:30

Client ID: BEACH-3 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.47	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	--	1
Methyl tert butyl ether	ND		ug/kg	1.9	--	1
p/m-Xylene	ND		ug/kg	1.9	--	1
o-Xylene	ND		ug/kg	0.94	--	1
Xylenes, Total	ND		ug/kg	0.94	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.94	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.94	--	1
Dibromomethane	ND		ug/kg	1.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.9	--	1
Styrene	ND		ug/kg	0.94	--	1
Dichlorodifluoromethane	ND		ug/kg	9.4	--	1
Acetone	ND		ug/kg	23	--	1
Carbon disulfide	ND		ug/kg	9.4	--	1
Methyl ethyl ketone	ND		ug/kg	9.4	--	1
Methyl isobutyl ketone	ND		ug/kg	9.4	--	1
2-Hexanone	ND		ug/kg	9.4	--	1
Bromochloromethane	ND		ug/kg	1.9	--	1
Tetrahydrofuran	ND		ug/kg	3.8	--	1
2,2-Dichloropropane	ND		ug/kg	1.9	--	1
1,2-Dibromoethane	ND		ug/kg	0.94	--	1
1,3-Dichloropropane	ND		ug/kg	1.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.47	--	1
Bromobenzene	ND		ug/kg	1.9	--	1
n-Butylbenzene	ND		ug/kg	0.94	--	1
sec-Butylbenzene	ND		ug/kg	0.94	--	1
tert-Butylbenzene	ND		ug/kg	1.9	--	1
o-Chlorotoluene	ND		ug/kg	1.9	--	1
p-Chlorotoluene	ND		ug/kg	1.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	--	1
Hexachlorobutadiene	ND		ug/kg	3.8	--	1
Isopropylbenzene	ND		ug/kg	0.94	--	1
p-Isopropyltoluene	ND		ug/kg	0.94	--	1
Naphthalene	ND		ug/kg	3.8	--	1
n-Propylbenzene	ND		ug/kg	0.94	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03 Date Collected: 01/07/20 11:30

Client ID: BEACH-3 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.9	--	1
Diethyl ether	ND		ug/kg	1.9	--	1
Diisopropyl Ether	ND		ug/kg	1.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.9	--	1
1,4-Dioxane	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04
Client ID: BEACH-4
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 15:39
Analyst: MKS
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.6	--	1
1,1-Dichloroethane	ND		ug/kg	0.93	--	1
Chloroform	ND		ug/kg	1.4	--	1
Carbon tetrachloride	ND		ug/kg	0.93	--	1
1,2-Dichloropropane	ND		ug/kg	0.93	--	1
Dibromochloromethane	ND		ug/kg	0.93	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.93	--	1
Tetrachloroethene	ND		ug/kg	0.46	--	1
Chlorobenzene	ND		ug/kg	0.46	--	1
Trichlorofluoromethane	ND		ug/kg	3.7	--	1
1,2-Dichloroethane	ND		ug/kg	0.93	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.46	--	1
Bromodichloromethane	ND		ug/kg	0.46	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.93	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.46	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.46	--	1
1,1-Dichloropropene	ND		ug/kg	0.46	--	1
Bromoform	ND		ug/kg	3.7	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.46	--	1
Benzene	ND		ug/kg	0.46	--	1
Toluene	ND		ug/kg	0.93	--	1
Ethylbenzene	ND		ug/kg	0.93	--	1
Chloromethane	ND		ug/kg	3.7	--	1
Bromomethane	ND		ug/kg	1.9	--	1
Vinyl chloride	ND		ug/kg	0.93	--	1
Chloroethane	ND		ug/kg	1.9	--	1
1,1-Dichloroethene	ND		ug/kg	0.93	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04 Date Collected: 01/07/20 11:45

Client ID: BEACH-4 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.46	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	--	1
Methyl tert butyl ether	ND		ug/kg	1.9	--	1
p/m-Xylene	ND		ug/kg	1.9	--	1
o-Xylene	ND		ug/kg	0.93	--	1
Xylenes, Total	ND		ug/kg	0.93	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.93	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.93	--	1
Dibromomethane	ND		ug/kg	1.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.9	--	1
Styrene	ND		ug/kg	0.93	--	1
Dichlorodifluoromethane	ND		ug/kg	9.3	--	1
Acetone	ND		ug/kg	23	--	1
Carbon disulfide	ND		ug/kg	9.3	--	1
Methyl ethyl ketone	ND		ug/kg	9.3	--	1
Methyl isobutyl ketone	ND		ug/kg	9.3	--	1
2-Hexanone	ND		ug/kg	9.3	--	1
Bromochloromethane	ND		ug/kg	1.9	--	1
Tetrahydrofuran	ND		ug/kg	3.7	--	1
2,2-Dichloropropane	ND		ug/kg	1.9	--	1
1,2-Dibromoethane	ND		ug/kg	0.93	--	1
1,3-Dichloropropane	ND		ug/kg	1.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.46	--	1
Bromobenzene	ND		ug/kg	1.9	--	1
n-Butylbenzene	ND		ug/kg	0.93	--	1
sec-Butylbenzene	ND		ug/kg	0.93	--	1
tert-Butylbenzene	ND		ug/kg	1.9	--	1
o-Chlorotoluene	ND		ug/kg	1.9	--	1
p-Chlorotoluene	ND		ug/kg	1.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	--	1
Hexachlorobutadiene	ND		ug/kg	3.7	--	1
Isopropylbenzene	ND		ug/kg	0.93	--	1
p-Isopropyltoluene	ND		ug/kg	0.93	--	1
Naphthalene	ND		ug/kg	3.7	--	1
n-Propylbenzene	ND		ug/kg	0.93	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04 Date Collected: 01/07/20 11:45

Client ID: BEACH-4 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.9	--	1
Diethyl ether	ND		ug/kg	1.9	--	1
Diisopropyl Ether	ND		ug/kg	1.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.9	--	1
1,4-Dioxane	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05
Client ID: BEACH-5
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 16:06
Analyst: MKS
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.3	--	1
1,1-Dichloroethane	ND		ug/kg	1.6	--	1
Chloroform	ND		ug/kg	2.5	--	1
Carbon tetrachloride	ND		ug/kg	1.6	--	1
1,2-Dichloropropane	ND		ug/kg	1.6	--	1
Dibromochloromethane	ND		ug/kg	1.6	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.6	--	1
Tetrachloroethene	ND		ug/kg	0.83	--	1
Chlorobenzene	ND		ug/kg	0.83	--	1
Trichlorofluoromethane	ND		ug/kg	6.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.6	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.83	--	1
Bromodichloromethane	ND		ug/kg	0.83	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.6	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.83	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.83	--	1
1,1-Dichloropropene	ND		ug/kg	0.83	--	1
Bromoform	ND		ug/kg	6.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.83	--	1
Benzene	ND		ug/kg	0.83	--	1
Toluene	ND		ug/kg	1.6	--	1
Ethylbenzene	ND		ug/kg	1.6	--	1
Chloromethane	ND		ug/kg	6.6	--	1
Bromomethane	ND		ug/kg	3.3	--	1
Vinyl chloride	ND		ug/kg	1.6	--	1
Chloroethane	ND		ug/kg	3.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.6	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.5	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05 Date Collected: 01/07/20 12:00

Client ID: BEACH-5 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.83	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.3	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.3	--	1
Methyl tert butyl ether	ND		ug/kg	3.3	--	1
p/m-Xylene	ND		ug/kg	3.3	--	1
o-Xylene	ND		ug/kg	1.6	--	1
Xylenes, Total	ND		ug/kg	1.6	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.6	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.6	--	1
Dibromomethane	ND		ug/kg	3.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.3	--	1
Styrene	ND		ug/kg	1.6	--	1
Dichlorodifluoromethane	ND		ug/kg	16	--	1
Acetone	ND		ug/kg	41	--	1
Carbon disulfide	ND		ug/kg	16	--	1
Methyl ethyl ketone	ND		ug/kg	16	--	1
Methyl isobutyl ketone	ND		ug/kg	16	--	1
2-Hexanone	ND		ug/kg	16	--	1
Bromochloromethane	ND		ug/kg	3.3	--	1
Tetrahydrofuran	ND		ug/kg	6.6	--	1
2,2-Dichloropropane	ND		ug/kg	3.3	--	1
1,2-Dibromoethane	ND		ug/kg	1.6	--	1
1,3-Dichloropropane	ND		ug/kg	3.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.83	--	1
Bromobenzene	ND		ug/kg	3.3	--	1
n-Butylbenzene	ND		ug/kg	1.6	--	1
sec-Butylbenzene	ND		ug/kg	1.6	--	1
tert-Butylbenzene	ND		ug/kg	3.3	--	1
o-Chlorotoluene	ND		ug/kg	3.3	--	1
p-Chlorotoluene	ND		ug/kg	3.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--	1
Hexachlorobutadiene	ND		ug/kg	6.6	--	1
Isopropylbenzene	ND		ug/kg	1.6	--	1
p-Isopropyltoluene	ND		ug/kg	1.6	--	1
Naphthalene	ND		ug/kg	6.6	--	1
n-Propylbenzene	ND		ug/kg	1.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05 Date Collected: 01/07/20 12:00

Client ID: BEACH-5 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.3	--	1
Diethyl ether	ND		ug/kg	3.3	--	1
Diisopropyl Ether	ND		ug/kg	3.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.3	--	1
1,4-Dioxane	ND		ug/kg	130	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06
Client ID: BEACH-6
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 16:34
Analyst: MKS
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.3	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.6	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	1.1	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.53	--	1
Chlorobenzene	ND		ug/kg	0.53	--	1
Trichlorofluoromethane	ND		ug/kg	4.3	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.53	--	1
Bromodichloromethane	ND		ug/kg	0.53	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.53	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.53	--	1
1,1-Dichloropropene	ND		ug/kg	0.53	--	1
Bromoform	ND		ug/kg	4.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.53	--	1
Benzene	ND		ug/kg	0.53	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.3	--	1
Bromomethane	ND		ug/kg	2.1	--	1
Vinyl chloride	ND		ug/kg	1.1	--	1
Chloroethane	ND		ug/kg	2.1	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06 Date Collected: 01/07/20 12:15

Client ID: BEACH-6 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.53	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	--	1
Methyl tert butyl ether	ND		ug/kg	2.1	--	1
p/m-Xylene	ND		ug/kg	2.1	--	1
o-Xylene	ND		ug/kg	1.1	--	1
Xylenes, Total	ND		ug/kg	1.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	2.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.1	--	1
Styrene	ND		ug/kg	1.1	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	27	--	1
Carbon disulfide	ND		ug/kg	11	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	2.1	--	1
Tetrahydrofuran	ND		ug/kg	4.3	--	1
2,2-Dichloropropane	ND		ug/kg	2.1	--	1
1,2-Dibromoethane	ND		ug/kg	1.1	--	1
1,3-Dichloropropane	ND		ug/kg	2.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.53	--	1
Bromobenzene	ND		ug/kg	2.1	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	2.1	--	1
o-Chlorotoluene	ND		ug/kg	2.1	--	1
p-Chlorotoluene	ND		ug/kg	2.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	--	1
Hexachlorobutadiene	ND		ug/kg	4.3	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.3	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06 Date Collected: 01/07/20 12:15

Client ID: BEACH-6 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	--	1
Diethyl ether	ND		ug/kg	2.1	--	1
Diisopropyl Ether	ND		ug/kg	2.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.1	--	1
1,4-Dioxane	ND		ug/kg	86	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07
Client ID: BEACH-7
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 17:01
Analyst: MKS
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	9.6	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	2.9	--	1
Carbon tetrachloride	ND		ug/kg	1.9	--	1
1,2-Dichloropropane	ND		ug/kg	1.9	--	1
Dibromochloromethane	ND		ug/kg	1.9	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	0.96	--	1
Chlorobenzene	ND		ug/kg	0.96	--	1
Trichlorofluoromethane	ND		ug/kg	7.7	--	1
1,2-Dichloroethane	ND		ug/kg	1.9	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.96	--	1
Bromodichloromethane	ND		ug/kg	0.96	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.9	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.96	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.96	--	1
1,1-Dichloropropene	ND		ug/kg	0.96	--	1
Bromoform	ND		ug/kg	7.7	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.96	--	1
Benzene	ND		ug/kg	0.96	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.9	--	1
Chloromethane	ND		ug/kg	7.7	--	1
Bromomethane	ND		ug/kg	3.8	--	1
Vinyl chloride	ND		ug/kg	1.9	--	1
Chloroethane	ND		ug/kg	3.8	--	1
1,1-Dichloroethene	ND		ug/kg	1.9	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.9	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07 Date Collected: 01/07/20 12:30

Client ID: BEACH-7 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.96	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.8	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.8	--	1
Methyl tert butyl ether	ND		ug/kg	3.8	--	1
p/m-Xylene	ND		ug/kg	3.8	--	1
o-Xylene	ND		ug/kg	1.9	--	1
Xylenes, Total	ND		ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.9	--	1
Dibromomethane	ND		ug/kg	3.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.8	--	1
Styrene	ND		ug/kg	1.9	--	1
Dichlorodifluoromethane	ND		ug/kg	19	--	1
Acetone	ND		ug/kg	48	--	1
Carbon disulfide	ND		ug/kg	19	--	1
Methyl ethyl ketone	ND		ug/kg	19	--	1
Methyl isobutyl ketone	ND		ug/kg	19	--	1
2-Hexanone	ND		ug/kg	19	--	1
Bromochloromethane	ND		ug/kg	3.8	--	1
Tetrahydrofuran	ND		ug/kg	7.7	--	1
2,2-Dichloropropane	ND		ug/kg	3.8	--	1
1,2-Dibromoethane	ND		ug/kg	1.9	--	1
1,3-Dichloropropane	ND		ug/kg	3.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.96	--	1
Bromobenzene	ND		ug/kg	3.8	--	1
n-Butylbenzene	ND		ug/kg	1.9	--	1
sec-Butylbenzene	ND		ug/kg	1.9	--	1
tert-Butylbenzene	ND		ug/kg	3.8	--	1
o-Chlorotoluene	ND		ug/kg	3.8	--	1
p-Chlorotoluene	ND		ug/kg	3.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.8	--	1
Hexachlorobutadiene	ND		ug/kg	7.7	--	1
Isopropylbenzene	ND		ug/kg	1.9	--	1
p-Isopropyltoluene	ND		ug/kg	1.9	--	1
Naphthalene	ND		ug/kg	7.7	--	1
n-Propylbenzene	ND		ug/kg	1.9	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07 Date Collected: 01/07/20 12:30

Client ID: BEACH-7 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.8	--	1
Diethyl ether	ND		ug/kg	3.8	--	1
Diisopropyl Ether	ND		ug/kg	3.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.8	--	1
1,4-Dioxane	ND		ug/kg	150	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08
Client ID: BEACH-8
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 17:29
Analyst: MKS
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.5	--	1
1,1-Dichloroethane	ND		ug/kg	1.7	--	1
Chloroform	ND		ug/kg	2.6	--	1
Carbon tetrachloride	ND		ug/kg	1.7	--	1
1,2-Dichloropropane	ND		ug/kg	1.7	--	1
Dibromochloromethane	ND		ug/kg	1.7	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.7	--	1
Tetrachloroethene	ND		ug/kg	0.85	--	1
Chlorobenzene	ND		ug/kg	0.85	--	1
Trichlorofluoromethane	ND		ug/kg	6.8	--	1
1,2-Dichloroethane	ND		ug/kg	1.7	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.85	--	1
Bromodichloromethane	ND		ug/kg	0.85	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.7	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.85	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.85	--	1
1,1-Dichloropropene	ND		ug/kg	0.85	--	1
Bromoform	ND		ug/kg	6.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.85	--	1
Benzene	ND		ug/kg	0.85	--	1
Toluene	ND		ug/kg	1.7	--	1
Ethylbenzene	ND		ug/kg	1.7	--	1
Chloromethane	ND		ug/kg	6.8	--	1
Bromomethane	ND		ug/kg	3.4	--	1
Vinyl chloride	ND		ug/kg	1.7	--	1
Chloroethane	ND		ug/kg	3.4	--	1
1,1-Dichloroethene	ND		ug/kg	1.7	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08 Date Collected: 01/07/20 12:45

Client ID: BEACH-8 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.85	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.4	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.4	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.4	--	1
Methyl tert butyl ether	ND		ug/kg	3.4	--	1
p/m-Xylene	ND		ug/kg	3.4	--	1
o-Xylene	ND		ug/kg	1.7	--	1
Xylenes, Total	ND		ug/kg	1.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.7	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.7	--	1
Dibromomethane	ND		ug/kg	3.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.4	--	1
Styrene	ND		ug/kg	1.7	--	1
Dichlorodifluoromethane	ND		ug/kg	17	--	1
Acetone	ND		ug/kg	42	--	1
Carbon disulfide	ND		ug/kg	17	--	1
Methyl ethyl ketone	ND		ug/kg	17	--	1
Methyl isobutyl ketone	ND		ug/kg	17	--	1
2-Hexanone	ND		ug/kg	17	--	1
Bromochloromethane	ND		ug/kg	3.4	--	1
Tetrahydrofuran	ND		ug/kg	6.8	--	1
2,2-Dichloropropane	ND		ug/kg	3.4	--	1
1,2-Dibromoethane	ND		ug/kg	1.7	--	1
1,3-Dichloropropane	ND		ug/kg	3.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.85	--	1
Bromobenzene	ND		ug/kg	3.4	--	1
n-Butylbenzene	ND		ug/kg	1.7	--	1
sec-Butylbenzene	ND		ug/kg	1.7	--	1
tert-Butylbenzene	ND		ug/kg	3.4	--	1
o-Chlorotoluene	ND		ug/kg	3.4	--	1
p-Chlorotoluene	ND		ug/kg	3.4	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.1	--	1
Hexachlorobutadiene	ND		ug/kg	6.8	--	1
Isopropylbenzene	ND		ug/kg	1.7	--	1
p-Isopropyltoluene	ND		ug/kg	1.7	--	1
Naphthalene	ND		ug/kg	6.8	--	1
n-Propylbenzene	ND		ug/kg	1.7	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08 Date Collected: 01/07/20 12:45

Client ID: BEACH-8 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.4	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.4	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.4	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.4	--	1
Diethyl ether	ND		ug/kg	3.4	--	1
Diisopropyl Ether	ND		ug/kg	3.4	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.4	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.4	--	1
1,4-Dioxane	ND		ug/kg	140	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09
Client ID: LEDGE-8 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 17:57
Analyst: MKS
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	11	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	3.4	--	1
Carbon tetrachloride	ND		ug/kg	2.2	--	1
1,2-Dichloropropane	ND		ug/kg	2.2	--	1
Dibromochloromethane	ND		ug/kg	2.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.1	--	1
Chlorobenzene	ND		ug/kg	1.1	--	1
Trichlorofluoromethane	ND		ug/kg	9.0	--	1
1,2-Dichloroethane	ND		ug/kg	2.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.1	--	1
Bromodichloromethane	ND		ug/kg	1.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.1	--	1
1,1-Dichloropropene	ND		ug/kg	1.1	--	1
Bromoform	ND		ug/kg	9.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Benzene	ND		ug/kg	1.1	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	2.2	--	1
Chloromethane	ND		ug/kg	9.0	--	1
Bromomethane	ND		ug/kg	4.5	--	1
Vinyl chloride	ND		ug/kg	2.2	--	1
Chloroethane	ND		ug/kg	4.5	--	1
1,1-Dichloroethene	ND		ug/kg	2.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.4	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09 Date Collected: 01/07/20 13:15

Client ID: LEDGE-8 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	4.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.5	--	1
Methyl tert butyl ether	ND		ug/kg	4.5	--	1
p/m-Xylene	ND		ug/kg	4.5	--	1
o-Xylene	ND		ug/kg	2.2	--	1
Xylenes, Total	ND		ug/kg	2.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.2	--	1
Dibromomethane	ND		ug/kg	4.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.5	--	1
Styrene	ND		ug/kg	2.2	--	1
Dichlorodifluoromethane	ND		ug/kg	22	--	1
Acetone	ND		ug/kg	56	--	1
Carbon disulfide	ND		ug/kg	22	--	1
Methyl ethyl ketone	ND		ug/kg	22	--	1
Methyl isobutyl ketone	ND		ug/kg	22	--	1
2-Hexanone	ND		ug/kg	22	--	1
Bromochloromethane	ND		ug/kg	4.5	--	1
Tetrahydrofuran	ND		ug/kg	9.0	--	1
2,2-Dichloropropane	ND		ug/kg	4.5	--	1
1,2-Dibromoethane	ND		ug/kg	2.2	--	1
1,3-Dichloropropane	ND		ug/kg	4.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Bromobenzene	ND		ug/kg	4.5	--	1
n-Butylbenzene	ND		ug/kg	2.2	--	1
sec-Butylbenzene	ND		ug/kg	2.2	--	1
tert-Butylbenzene	ND		ug/kg	4.5	--	1
o-Chlorotoluene	ND		ug/kg	4.5	--	1
p-Chlorotoluene	ND		ug/kg	4.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.7	--	1
Hexachlorobutadiene	ND		ug/kg	9.0	--	1
Isopropylbenzene	ND		ug/kg	2.2	--	1
p-Isopropyltoluene	ND		ug/kg	2.2	--	1
Naphthalene	ND		ug/kg	9.0	--	1
n-Propylbenzene	ND		ug/kg	2.2	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09 Date Collected: 01/07/20 13:15

Client ID: LEDGE-8 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	4.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.5	--	1
Diethyl ether	ND		ug/kg	4.5	--	1
Diisopropyl Ether	ND		ug/kg	4.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.5	--	1
1,4-Dioxane	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10
Client ID: LEDGE-6 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/10/20 17:55
Analyst: MKS
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	360	--	1
1,1-Dichloroethane	ND		ug/kg	72	--	1
Chloroform	ND		ug/kg	110	--	1
Carbon tetrachloride	ND		ug/kg	72	--	1
1,2-Dichloropropane	ND		ug/kg	72	--	1
Dibromochloromethane	ND		ug/kg	72	--	1
1,1,2-Trichloroethane	ND		ug/kg	72	--	1
Tetrachloroethene	ND		ug/kg	36	--	1
Chlorobenzene	ND		ug/kg	36	--	1
Trichlorofluoromethane	ND		ug/kg	290	--	1
1,2-Dichloroethane	ND		ug/kg	72	--	1
1,1,1-Trichloroethane	ND		ug/kg	36	--	1
Bromodichloromethane	ND		ug/kg	36	--	1
trans-1,3-Dichloropropene	ND		ug/kg	72	--	1
cis-1,3-Dichloropropene	ND		ug/kg	36	--	1
1,3-Dichloropropene, Total	ND		ug/kg	36	--	1
1,1-Dichloropropene	ND		ug/kg	36	--	1
Bromoform	ND		ug/kg	290	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	36	--	1
Benzene	ND		ug/kg	36	--	1
Toluene	ND		ug/kg	72	--	1
Ethylbenzene	ND		ug/kg	72	--	1
Chloromethane	ND		ug/kg	290	--	1
Bromomethane	ND		ug/kg	140	--	1
Vinyl chloride	ND		ug/kg	72	--	1
Chloroethane	ND		ug/kg	140	--	1
1,1-Dichloroethene	ND		ug/kg	72	--	1
trans-1,2-Dichloroethene	ND		ug/kg	110	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10 Date Collected: 01/07/20 13:30

Client ID: LEDGE-6 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	36	--	1
1,2-Dichlorobenzene	ND		ug/kg	140	--	1
1,3-Dichlorobenzene	ND		ug/kg	140	--	1
1,4-Dichlorobenzene	ND		ug/kg	140	--	1
Methyl tert butyl ether	ND		ug/kg	140	--	1
p/m-Xylene	ND		ug/kg	140	--	1
o-Xylene	ND		ug/kg	72	--	1
Xylenes, Total	ND		ug/kg	72	--	1
cis-1,2-Dichloroethene	ND		ug/kg	72	--	1
1,2-Dichloroethene, Total	ND		ug/kg	72	--	1
Dibromomethane	ND		ug/kg	140	--	1
1,2,3-Trichloropropane	ND		ug/kg	140	--	1
Styrene	ND		ug/kg	72	--	1
Dichlorodifluoromethane	ND		ug/kg	720	--	1
Acetone	ND		ug/kg	720	--	1
Carbon disulfide	ND		ug/kg	720	--	1
Methyl ethyl ketone	ND		ug/kg	720	--	1
Methyl isobutyl ketone	ND		ug/kg	720	--	1
2-Hexanone	ND		ug/kg	720	--	1
Bromochloromethane	ND		ug/kg	140	--	1
Tetrahydrofuran	ND		ug/kg	290	--	1
2,2-Dichloropropane	ND		ug/kg	140	--	1
1,2-Dibromoethane	ND		ug/kg	72	--	1
1,3-Dichloropropane	ND		ug/kg	140	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	36	--	1
Bromobenzene	ND		ug/kg	140	--	1
n-Butylbenzene	ND		ug/kg	72	--	1
sec-Butylbenzene	ND		ug/kg	72	--	1
tert-Butylbenzene	ND		ug/kg	140	--	1
o-Chlorotoluene	ND		ug/kg	140	--	1
p-Chlorotoluene	ND		ug/kg	140	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	290	--	1
Isopropylbenzene	ND		ug/kg	72	--	1
p-Isopropyltoluene	260		ug/kg	72	--	1
Naphthalene	ND		ug/kg	290	--	1
n-Propylbenzene	ND		ug/kg	72	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10 Date Collected: 01/07/20 13:30

Client ID: LEDGE-6 (GREY) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	140	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	140	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	140	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	140	--	1
Diethyl ether	ND		ug/kg	140	--	1
Diisopropyl Ether	ND		ug/kg	140	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	140	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	140	--	1
1,4-Dioxane	ND		ug/kg	5700	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-09 Batch: WG1328935-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-09 Batch: WG1328935-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-09 Batch: WG1328935-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
Diethyl ether	ND		ug/kg	2.0	--
Diisopropyl Ether	ND		ug/kg	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--
1,4-Dioxane	ND		ug/kg	80	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:54
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 10 Batch: WG1329009-5					
Methylene chloride	ND		ug/kg	250	--
1,1-Dichloroethane	ND		ug/kg	50	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	50	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	50	--
Tetrachloroethene	ND		ug/kg	25	--
Chlorobenzene	ND		ug/kg	25	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	25	--
Bromodichloromethane	ND		ug/kg	25	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	25	--
1,3-Dichloropropene, Total	ND		ug/kg	25	--
1,1-Dichloropropene	ND		ug/kg	25	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	--
Benzene	ND		ug/kg	25	--
Toluene	ND		ug/kg	50	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	210		ug/kg	100	--
Vinyl chloride	ND		ug/kg	50	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	25	--

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:54
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 10 Batch: WG1329009-5					
1,2-Dichlorobenzene	ND		ug/kg	100	--
1,3-Dichlorobenzene	ND		ug/kg	100	--
1,4-Dichlorobenzene	ND		ug/kg	100	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	50	--
Xylenes, Total	ND		ug/kg	50	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	100	--
1,2,3-Trichloropropane	ND		ug/kg	100	--
Styrene	ND		ug/kg	50	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	500	--
Carbon disulfide	ND		ug/kg	500	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	100	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	100	--
1,2-Dibromoethane	ND		ug/kg	50	--
1,3-Dichloropropane	ND		ug/kg	100	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	--
Bromobenzene	ND		ug/kg	100	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	100	--
o-Chlorotoluene	ND		ug/kg	100	--

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/10/20 11:54
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 10 Batch: WG1329009-5					
p-Chlorotoluene	ND		ug/kg	100	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	100	--
1,2,4-Trichlorobenzene	ND		ug/kg	100	--
1,3,5-Trimethylbenzene	ND		ug/kg	100	--
1,2,4-Trimethylbenzene	ND		ug/kg	100	--
Diethyl ether	ND		ug/kg	100	--
Diisopropyl Ether	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	--
1,4-Dioxane	ND		ug/kg	4000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-09 Batch: WG1328935-3 WG1328935-4								
Methylene chloride	86		84		70-130	2		20
1,1-Dichloroethane	90		86		70-130	5		20
Chloroform	90		87		70-130	3		20
Carbon tetrachloride	88		85		70-130	3		20
1,2-Dichloropropane	93		90		70-130	3		20
Dibromochloromethane	95		93		70-130	2		20
1,1,2-Trichloroethane	90		89		70-130	1		20
Tetrachloroethene	86		85		70-130	1		20
Chlorobenzene	86		85		70-130	1		20
Trichlorofluoromethane	86		80		70-130	7		20
1,2-Dichloroethane	92		89		70-130	3		20
1,1,1-Trichloroethane	89		86		70-130	3		20
Bromodichloromethane	97		94		70-130	3		20
trans-1,3-Dichloropropene	84		82		70-130	2		20
cis-1,3-Dichloropropene	87		85		70-130	2		20
1,1-Dichloropropene	90		86		70-130	5		20
Bromoform	86		86		70-130	0		20
1,1,2,2-Tetrachloroethane	87		86		70-130	1		20
Benzene	89		86		70-130	3		20
Toluene	85		84		70-130	1		20
Ethylbenzene	86		85		70-130	1		20
Chloromethane	84		78		70-130	7		20
Bromomethane	86		80		70-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-09 Batch: WG1328935-3 WG1328935-4								
Vinyl chloride	84		80		70-130	5		20
Chloroethane	89		84		70-130	6		20
1,1-Dichloroethene	107		81		70-130	**28**	Q	20
trans-1,2-Dichloroethene	90		86		70-130	5		20
Trichloroethene	91		88		70-130	3		20
1,2-Dichlorobenzene	84		85		70-130	1		20
1,3-Dichlorobenzene	84		85		70-130	1		20
1,4-Dichlorobenzene	82		83		70-130	1		20
Methyl tert butyl ether	94		92		70-130	2		20
p/m-Xylene	89		88		70-130	1		20
o-Xylene	90		89		70-130	1		20
cis-1,2-Dichloroethene	92		90		70-130	2		20
Dibromomethane	96		94		70-130	2		20
1,2,3-Trichloropropane	82		81		70-130	1		20
Styrene	79		78		70-130	1		20
Dichlorodifluoromethane	75		71		70-130	5		20
Acetone	91		85		70-130	7		20
Carbon disulfide	107		80		70-130	**29**	Q	20
Methyl ethyl ketone	94		82		70-130	14		20
Methyl isobutyl ketone	90		86		70-130	5		20
2-Hexanone	89		84		70-130	6		20
Bromochloromethane	94		93		70-130	1		20
Tetrahydrofuran	100		96		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-09 Batch: WG1328935-3 WG1328935-4								
2,2-Dichloropropane	92		87		70-130	6		20
1,2-Dibromoethane	93		93		70-130	0		20
1,3-Dichloropropane	89		89		70-130	0		20
1,1,1,2-Tetrachloroethane	90		90		70-130	0		20
Bromobenzene	82		84		70-130	2		20
n-Butylbenzene	83		82		70-130	1		20
sec-Butylbenzene	82		81		70-130	1		20
tert-Butylbenzene	83		83		70-130	0		20
o-Chlorotoluene	80		81		70-130	1		20
p-Chlorotoluene	82		84		70-130	2		20
1,2-Dibromo-3-chloropropane	80		77		70-130	4		20
Hexachlorobutadiene	80		78		70-130	3		20
Isopropylbenzene	83		83		70-130	0		20
p-Isopropyltoluene	84		84		70-130	0		20
Naphthalene	93		89		70-130	4		20
n-Propylbenzene	81		82		70-130	1		20
1,2,3-Trichlorobenzene	86		85		70-130	1		20
1,2,4-Trichlorobenzene	90		88		70-130	2		20
1,3,5-Trimethylbenzene	82		82		70-130	0		20
1,2,4-Trimethylbenzene	85		84		70-130	1		20
Diethyl ether	89		89		70-130	0		20
Diisopropyl Ether	95		91		70-130	4		20
Ethyl-Tert-Butyl-Ether	95		92		70-130	3		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-09 Batch: WG1328935-3 WG1328935-4								
Tertiary-Amyl Methyl Ether	95		92		70-130	3		20
1,4-Dioxane	98		89		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	97		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 10 Batch: WG1329009-3 WG1329009-4								
Methylene chloride	113		106		70-130	6		20
1,1-Dichloroethane	114		108		70-130	5		20
Chloroform	111		105		70-130	6		20
Carbon tetrachloride	104		98		70-130	6		20
1,2-Dichloropropane	114		110		70-130	4		20
Dibromochloromethane	95		93		70-130	2		20
1,1,2-Trichloroethane	95		92		70-130	3		20
Tetrachloroethene	91		87		70-130	4		20
Chlorobenzene	94		91		70-130	3		20
Trichlorofluoromethane	107		100		70-130	7		20
1,2-Dichloroethane	111		108		70-130	3		20
1,1,1-Trichloroethane	109		104		70-130	5		20
Bromodichloromethane	111		106		70-130	5		20
trans-1,3-Dichloropropene	98		93		70-130	5		20
cis-1,3-Dichloropropene	112		108		70-130	4		20
1,1-Dichloropropene	104		100		70-130	4		20
Bromoform	92		88		70-130	4		20
1,1,2,2-Tetrachloroethane	94		90		70-130	4		20
Benzene	112		107		70-130	5		20
Toluene	94		90		70-130	4		20
Ethylbenzene	94		90		70-130	4		20
Chloromethane	105		93		70-130	12		20
Bromomethane	**135**	Q	129		70-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 10 Batch: WG1329009-3 WG1329009-4								
Vinyl chloride	111		104		70-130	7		20
Chloroethane	116		109		70-130	6		20
1,1-Dichloroethene	104		98		70-130	6		20
trans-1,2-Dichloroethene	110		104		70-130	6		20
Trichloroethene	110		105		70-130	5		20
1,2-Dichlorobenzene	91		87		70-130	4		20
1,3-Dichlorobenzene	91		87		70-130	4		20
1,4-Dichlorobenzene	91		87		70-130	4		20
Methyl tert butyl ether	111		106		70-130	5		20
p/m-Xylene	95		91		70-130	4		20
o-Xylene	94		90		70-130	4		20
cis-1,2-Dichloroethene	110		107		70-130	3		20
Dibromomethane	110		106		70-130	4		20
1,2,3-Trichloropropane	94		90		70-130	4		20
Styrene	95		91		70-130	4		20
Dichlorodifluoromethane	99		93		70-130	6		20
Acetone	114		109		70-130	4		20
Carbon disulfide	102		96		70-130	6		20
Methyl ethyl ketone	114		109		70-130	4		20
Methyl isobutyl ketone	99		94		70-130	5		20
2-Hexanone	91		88		70-130	3		20
Bromochloromethane	107		103		70-130	4		20
Tetrahydrofuran	112		106		70-130	6		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 10 Batch: WG1329009-3 WG1329009-4								
2,2-Dichloropropane	111		105		70-130	6		20
1,2-Dibromoethane	94		91		70-130	3		20
1,3-Dichloropropane	97		92		70-130	5		20
1,1,1,2-Tetrachloroethane	95		92		70-130	3		20
Bromobenzene	89		86		70-130	3		20
n-Butylbenzene	93		89		70-130	4		20
sec-Butylbenzene	90		87		70-130	3		20
tert-Butylbenzene	89		86		70-130	3		20
o-Chlorotoluene	92		89		70-130	3		20
p-Chlorotoluene	93		90		70-130	3		20
1,2-Dibromo-3-chloropropane	91		87		70-130	4		20
Hexachlorobutadiene	86		81		70-130	6		20
Isopropylbenzene	91		88		70-130	3		20
p-Isopropyltoluene	90		87		70-130	3		20
Naphthalene	94		90		70-130	4		20
n-Propylbenzene	92		90		70-130	2		20
1,2,3-Trichlorobenzene	91		88		70-130	3		20
1,2,4-Trichlorobenzene	92		89		70-130	3		20
1,3,5-Trimethylbenzene	91		88		70-130	3		20
1,2,4-Trimethylbenzene	92		88		70-130	4		20
Diethyl ether	110		107		70-130	3		20
Diisopropyl Ether	117		112		70-130	4		20
Ethyl-Tert-Butyl-Ether	114		108		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2000718

Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 10 Batch: WG1329009-3 WG1329009-4								
Tertiary-Amyl Methyl Ether	110		105		70-130	5		20
1,4-Dioxane	104		99		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		99		70-130
Toluene-d8	94		94		70-130
4-Bromofluorobenzene	101		99		70-130
Dibromofluoromethane	98		98		70-130

SEMIVOLATILES

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01
Client ID: BEACH-1
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 00:07
Analyst: ALS
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	71	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	71	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		30-130
2-Fluorobiphenyl	77		30-130
4-Terphenyl-d14	93		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02
Client ID: BEACH-2
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 00:56
Analyst: ALS
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	72	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	94		30-130
4-Terphenyl-d14	113		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03
Client ID: BEACH-3
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 01:20
Analyst: ALS
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	72	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	79		30-130
4-Terphenyl-d14	95		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04
Client ID: BEACH-4
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/10/20 23:19
Analyst: ALS
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	130	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	130	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	130	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	130	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	70	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	70	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		30-130
2-Fluorobiphenyl	80		30-130
4-Terphenyl-d14	97		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05
Client ID: BEACH-5
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 22:17
Analyst: EK
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	77	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	77	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	83		30-130
4-Terphenyl-d14	97		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06
Client ID: BEACH-6
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 22:41
Analyst: EK
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	72	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		30-130
2-Fluorobiphenyl	78		30-130
4-Terphenyl-d14	94		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07
Client ID: BEACH-7
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 23:06
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	79		30-130
4-Terphenyl-d14	90		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08
Client ID: BEACH-8
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 23:30
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	80	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		30-130
2-Fluorobiphenyl	76		30-130
4-Terphenyl-d14	78		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09
Client ID: LEDGE-8 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 23:54
Analyst: EK
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	72	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		30-130
2-Fluorobiphenyl	72		30-130
4-Terphenyl-d14	90		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10
Client ID: LEDGE-6 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/12/20 00:19
Analyst: EK
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	75	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		30-130
2-Fluorobiphenyl	82		30-130
4-Terphenyl-d14	88		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 01/10/20 21:18
Analyst: ALS

Extraction Method: EPA 3546
Extraction Date: 01/09/20 19:37

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-10 Batch: WG1328561-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	99	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	89		30-130
4-Terphenyl-d14	108		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-10 Batch: WG1328561-2 WG1328561-3								
Acenaphthene	88		92		40-140	4		30
Fluoranthene	85		92		40-140	8		30
Naphthalene	86		90		40-140	5		30
Benzo(a)anthracene	83		95		40-140	13		30
Benzo(a)pyrene	91		105		40-140	14		30
Benzo(b)fluoranthene	94		107		40-140	13		30
Benzo(k)fluoranthene	90		103		40-140	13		30
Chrysene	79		92		40-140	15		30
Acenaphthylene	86		90		40-140	5		30
Anthracene	90		97		40-140	7		30
Benzo(ghi)perylene	85		98		40-140	14		30
Fluorene	90		96		40-140	6		30
Phenanthrene	87		94		40-140	8		30
Dibenzo(a,h)anthracene	95		110		40-140	15		30
Indeno(1,2,3-cd)pyrene	89		104		40-140	16		30
Pyrene	82		89		40-140	8		30
2-Methylnaphthalene	86		90		40-140	5		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2000718

Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-10 Batch: WG1328561-2 WG1328561-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	75		74		30-130
2-Fluorobiphenyl	80		84		30-130
4-Terphenyl-d14	88		97		30-130

PETROLEUM HYDROCARBONS

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01
Client ID: BEACH-1
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 12:09
Analyst: AN
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	32200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02
Client ID: BEACH-2
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 12:41
Analyst: AN
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	83		40-140

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2000718
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03
Client ID: BEACH-3
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 13:13
Analyst: AN
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	33200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	69		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04
Client ID: BEACH-4
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 15:55
Analyst: AN
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	33300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	77		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05
Client ID: BEACH-5
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 14:18
Analyst: AN
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	70		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06
Client ID: BEACH-6
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 14:50
Analyst: AN
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	32800	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	68		40-140

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2000718
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07
Client ID: BEACH-7
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 15:22
Analyst: AN
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08
Client ID: BEACH-8
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 16:27
Analyst: AN
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	36900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	69		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09
Client ID: LEDGE-8 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 16:59
Analyst: AN
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	33300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10
Client ID: LEDGE-6 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 15:55
Analyst: AN
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	56		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 11:04
Analyst: AN

Extraction Method: EPA 3546
Extraction Date: 01/09/20 17:43

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01-10 Batch: WG1328541-1					
TPH (C10-C36)	ND		ug/kg	32500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	77		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2000718

Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-10 Batch: WG1328541-2								
TPH (C10-C36)	74		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	66				40-140

Lab Duplicate Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328541-3 QC Sample: L2000718-01 Client ID: BEACH-1						
TPH (C10-C36)	ND	ND	ug/kg	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		80		40-140

METALS

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01 Date Collected: 01/07/20 11:00

Client ID: BEACH-1 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.670		mg/kg	0.385	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Barium, Total	0.654		mg/kg	0.385	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.385	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Chromium, Total	0.435		mg/kg	0.385	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Lead, Total	ND		mg/kg	1.92	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.074	--	1	01/10/20 02:26	01/10/20 13:16	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	1.92	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.385	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC
Zinc, Total	ND		mg/kg	1.92	--	1	01/09/20 21:15	01/10/20 19:05	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02 Date Collected: 01/07/20 11:15

Client ID: BEACH-2 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	1.63		mg/kg	0.405	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Barium, Total	1.08		mg/kg	0.405	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.405	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Chromium, Total	1.40		mg/kg	0.405	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Lead, Total	ND		mg/kg	2.02	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.069	--	1	01/10/20 02:26	01/10/20 13:18	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.02	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.405	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC
Zinc, Total	3.81		mg/kg	2.02	--	1	01/09/20 21:15	01/10/20 19:09	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03 Date Collected: 01/07/20 11:30

Client ID: BEACH-3 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.974		mg/kg	0.401	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Barium, Total	1.21		mg/kg	0.401	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.401	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Chromium, Total	0.813		mg/kg	0.401	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Lead, Total	ND		mg/kg	2.00	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.075	--	1	01/10/20 02:26	01/10/20 13:20	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.00	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.401	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC
Zinc, Total	2.65		mg/kg	2.00	--	1	01/09/20 21:15	01/10/20 19:14	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04 Date Collected: 01/07/20 11:45

Client ID: BEACH-4 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.804		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Barium, Total	0.418		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Chromium, Total	0.654		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Lead, Total	ND		mg/kg	1.97	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.074	--	1	01/10/20 02:26	01/10/20 13:21	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	1.97	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC
Zinc, Total	ND		mg/kg	1.97	--	1	01/09/20 21:15	01/10/20 19:46	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05 Date Collected: 01/07/20 12:00

Client ID: BEACH-5 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.35		mg/kg	0.431	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Barium, Total	4.23		mg/kg	0.431	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.431	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Chromium, Total	3.43		mg/kg	0.431	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Lead, Total	6.73		mg/kg	2.15	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.079	--	1	01/10/20 02:26	01/10/20 13:23	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.15	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.431	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC
Zinc, Total	7.48		mg/kg	2.15	--	1	01/09/20 21:15	01/10/20 19:50	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06 Date Collected: 01/07/20 12:15

Client ID: BEACH-6 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	1.26		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Barium, Total	1.97		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Chromium, Total	1.48		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Lead, Total	3.35		mg/kg	1.97	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.074	--	1	01/10/20 02:26	01/10/20 13:25	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	1.97	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.394	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC
Zinc, Total	4.61		mg/kg	1.97	--	1	01/09/20 21:15	01/10/20 19:55	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07 Date Collected: 01/07/20 12:30

Client ID: BEACH-7 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.00		mg/kg	0.421	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Barium, Total	5.08		mg/kg	0.421	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.421	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Chromium, Total	3.17		mg/kg	0.421	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Lead, Total	9.42		mg/kg	2.11	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.079	--	1	01/10/20 02:26	01/10/20 13:27	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.11	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.421	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC
Zinc, Total	9.50		mg/kg	2.11	--	1	01/09/20 21:15	01/10/20 20:00	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08 Date Collected: 01/07/20 12:45

Client ID: BEACH-8 Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.18		mg/kg	0.451	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Barium, Total	2.24		mg/kg	0.451	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.451	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Chromium, Total	1.50		mg/kg	0.451	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Lead, Total	3.83		mg/kg	2.25	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.084	--	1	01/10/20 02:26	01/10/20 13:28	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.25	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.451	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC
Zinc, Total	4.82		mg/kg	2.25	--	1	01/09/20 21:15	01/10/20 20:04	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09 Date Collected: 01/07/20 13:15

Client ID: LEDGE-8 (TAN) Date Received: 01/08/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.20		mg/kg	0.395	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Barium, Total	4.12		mg/kg	0.395	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.395	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Chromium, Total	3.19		mg/kg	0.395	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Lead, Total	4.74		mg/kg	1.98	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.070	--	1	01/10/20 02:26	01/10/20 13:30	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	1.98	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.395	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC
Zinc, Total	7.16		mg/kg	1.98	--	1	01/09/20 21:15	01/10/20 20:09	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2000718
Project Number: 19-2000
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10
Client ID: LEDGE-6 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	3.10		mg/kg	0.417	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Barium, Total	9.38		mg/kg	0.417	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.417	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Chromium, Total	6.17		mg/kg	0.417	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Lead, Total	16.1		mg/kg	2.08	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Mercury, Total	ND		mg/kg	0.081	--	1	01/10/20 02:26	01/10/20 13:32	EPA 7471B	97,7471B	GD
Selenium, Total	ND		mg/kg	2.08	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Silver, Total	ND		mg/kg	0.417	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC
Zinc, Total	15.8		mg/kg	2.08	--	1	01/09/20 21:15	01/10/20 20:27	EPA 3050B	97,6010D	LC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG1328548-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Barium, Total	ND		mg/kg	0.400	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Chromium, Total	ND		mg/kg	0.400	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Lead, Total	ND		mg/kg	2.00	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Selenium, Total	ND		mg/kg	2.00	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Silver, Total	ND		mg/kg	0.400	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC
Zinc, Total	ND		mg/kg	2.00	--	1	01/09/20 21:15	01/10/20 18:38	97,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG1328631-1										
Mercury, Total	ND		mg/kg	0.083	--	1	01/10/20 02:26	01/10/20 13:03	97,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG1328548-2 WG1328548-3 SRM Lot Number: D105-540								
Arsenic, Total	106		113		70-130	6		30
Barium, Total	94		98		75-125	4		30
Cadmium, Total	95		98		75-125	3		30
Chromium, Total	97		105		70-130	8		30
Lead, Total	97		103		71-128	6		30
Selenium, Total	104		110		63-137	6		30
Silver, Total	106		112		69-131	6		30
Zinc, Total	98		102		70-130	4		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG1328631-2 WG1328631-3 SRM Lot Number: D105-540								
Mercury, Total	88		96		60-141	9		30

INORGANICS
&
MISCELLANEOUS

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-01
Client ID: BEACH-1
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:00
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	91.35		MPN/gm	0.2	NA	1	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	97.4		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.0		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.96	--	1	-	01/09/20 08:11	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	120	--	1	01/10/20 03:36	01/10/20 19:27	121,4500NH3-H	AT
Phosphorus, Total	32		mg/kg	4.6	--	.9	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	99		mg/kg	14	--	.9	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-02
Client ID: BEACH-2
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	340.37		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	96.6		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.3		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.98	--	1	-	01/09/20 08:12	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	160	--	1	01/10/20 03:36	01/10/20 19:31	121,4500NH3-H	AT
Phosphorus, Total	34		mg/kg	9.8	--	1.9	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	100		mg/kg	30	--	1.9	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-03
Client ID: BEACH-3
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/07/20 11:30
Date Received: 01/08/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	278.43		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	95.4		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.1		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.89	--	1	-	01/09/20 08:13	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:36	01/10/20 19:32	121,4500NH3-H	AT
Phosphorus, Total	64		mg/kg	8.9	--	1.7	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	200		mg/kg	27	--	1.7	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-04
Client ID: BEACH-4
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 11:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	97.3		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.3		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.96	--	1	-	01/09/20 08:15	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:36	01/10/20 19:33	121,4500NH3-H	AT
Phosphorus, Total	21		mg/kg	4.1	--	.8	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	65		mg/kg	12	--	.8	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-05
Client ID: BEACH-5
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/07/20 12:00
Date Received: 01/08/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	1588.86		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	90.3		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.0		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.0		mg/kg	1.0	--	1	-	01/09/20 08:16	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	160	--	1	01/10/20 03:36	01/10/20 19:34	121,4500NH3-H	AT
Phosphorus, Total	140		mg/kg	9.4	--	1.7	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	440		mg/kg	28	--	1.7	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-06
Client ID: BEACH-6
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/07/20 12:15
Date Received: 01/08/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	893.92		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	95.4		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.2		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.97	--	1	-	01/09/20 08:17	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:36	01/10/20 19:35	121,4500NH3-H	AT
Phosphorus, Total	59		mg/kg	10	--	1.9	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	180		mg/kg	30	--	1.9	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-07
Client ID: BEACH-7
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/07/20 12:30
Date Received: 01/08/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	>=1571.99		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	92.9		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.3		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.97	--	1	-	01/09/20 08:21	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	100	--	1	01/10/20 03:36	01/10/20 19:36	121,4500NH3-H	AT
Phosphorus, Total	90		mg/kg	10	--	1.9	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	280		mg/kg	31	--	1.9	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-08
Client ID: BEACH-8
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 12:45
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	>=1590.55		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	87.2		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.3		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.1		mg/kg	1.1	--	1	-	01/09/20 08:22	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	110	--	1	01/10/20 03:36	01/10/20 19:37	121,4500NH3-H	AT
Phosphorus, Total	90		mg/kg	11	--	2	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	280		mg/kg	34	--	2	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-09
Client ID: LEDGE-8 (TAN)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:15
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	34.63		MPN/gm	0.2	NA	1	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	95.0		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.4		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	1.2		mg/kg	0.96	--	1	-	01/09/20 08:24	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	140		mg/kg	120	--	1	01/10/20 03:36	01/10/20 19:38	121,4500NH3-H	AT
Phosphorus, Total	150		mg/kg	10	--	1.9	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	480		mg/kg	30	--	1.9	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

SAMPLE RESULTS

Lab ID: L2000718-10
Client ID: LEDGE-6 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/07/20 13:30
Date Received: 01/08/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	>=1588.99		MPN/gm	2	NA	10	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab										
Solids, Total	92.1		%	0.100	NA	1	-	01/09/20 01:13	121,2540G	YA
pH (H)	7.2		SU	-	NA	1	-	01/08/20 18:38	1,9045D	AS
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 08:25	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	350		mg/kg	120	--	1	01/10/20 03:36	01/10/20 19:38	121,4500NH3-H	AT
Phosphorus, Total	220		mg/kg	11	--	2	-	01/09/20 09:30	121,4500P-E	SD
Phosphate, Total	680		mg/kg	32	--	2	-	01/09/20 09:30	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2000718

Project Number: 19-2000 **Report Date:** 01/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab for sample(s): 01-10 Batch: WG1328085-1										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/08/20 21:45	121,9221B	CO
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1328267-1										
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/09/20 07:54	121,4500NO3-F	MR
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1328300-1										
Phosphorus, Total	ND		mg/kg	5.0	--	1	-	01/09/20 09:30	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1328400-1										
Phosphate, Total	ND		mg/kg	15	--	1	-	01/09/20 09:30	121,4500P-E(M)	SD
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1328585-1										
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/10/20 03:36	01/10/20 19:22	121,4500NH3-H	AT

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328089-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328267-2								
Nitrogen, Nitrate/Nitrite	105		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328300-2								
Phosphorus, Total	85		-		52-148	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328400-2								
Phosphate, Total	89		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328585-2								
Nitrogen, Total Kjeldahl	102		-		83-111	-		26

Matrix Spike Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2000718
Report Date: 01/15/20

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): 01-10 QC Batch ID: WG1328300-3 QC Sample: L2000718-01 Client ID: BEACH-1												
Phosphorus, Total	32	245	290	110		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328400-3 QC Sample: L2000718-01 Client ID: BEACH-1												
Phosphate, Total	99	756	890	100		-	-		75-125	-		25

Lab Duplicate Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2000718

Report Date: 01/15/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328175-1 QC Sample: L2000718-03 Client ID: BEACH-3						
Solids, Total	95.4	95.4	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328300-4 QC Sample: L2000718-01 Client ID: BEACH-1						
Phosphorus, Total	32	40	mg/kg	**22**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328400-4 QC Sample: L2000718-01 Client ID: BEACH-1						
Phosphate, Total	99	120	mg/kg	19		25

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

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(*)
L2000718-01A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-01B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-01C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-01D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-01F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-01G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-01H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-02A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-02B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-02C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-02D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-02F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-02G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-02H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-03A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000718-03B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-03C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-03D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-03F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-03G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-03H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-04A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-04B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-04C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-04D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-04F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-04G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-04H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-05A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-05B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-05C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-05D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-05F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000718-05G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-05H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-06A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-06B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-06C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-06D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-06F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-06G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-06H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-07A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-07B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-07C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-07D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-07F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-07G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-07G1	Glass 250ml unpreserved split	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-07H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-08A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-08B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-08C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000718-08D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-08F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-08G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-08H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-09A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-09B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-09C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-09D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-09F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-09G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)
L2000718-09H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)
L2000718-10A	Vial MeOH preserved	A	NA		2.1	Y	Absent		MCP-8260HLW-10(14)
L2000718-10B	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-10C	Vial water preserved	A	NA		2.1	Y	Absent	08-JAN-20 14:34	MCP-8260HLW-10(14)
L2000718-10D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2000718-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2000718-10F	Bacteria Cup unpreserved	A	NA		2.1	Y	Absent		T-COLI-MPN(7)
L2000718-10G	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TPH-DRO-D(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2000718
Report Date: 01/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2000718-10H	Glass 250ml/8oz unpreserved	A	NA		2.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14)

*Values in parentheses indicate holding time in days

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

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: Data Usability Report

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

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.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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. 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 reporting limit (RL) for the sample.

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

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

Data Qualifiers

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.

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2000718
Project Number:	19-2000	**Report Date:**	01/15/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

CHAIN OF CUSTODY

PAGE 1 OF

Date Rec'd in Lab: 1/8/20

ALPHA Job #: L2000718

ALPHA Analytical Laboratories
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: HI Engineering
Address: 44 Wood Ave, Mansfield, MA
Phone:
Email:

Project Information

Project Name: Epsilon Assoc Sand Samp
Project Location: Nantucket, MA
Project #: 19-2000
Project Manager: Jim Borrebach
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: 5-Day Turn

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

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 _____

Additional Project Information:
Hold excess soil for future Analyses!!

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; Total Zinc; Total Cyanide; NO_3/NO_2; Total Kjeldahl N; Phosphorus/Phosphate; pH

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	EPH	TPH	Total Zinc	Total Cyanide	NO_3/NO_2	Total Kjeldahl N	Phosphorus/Phosphate	pH	Sample Comments	Total # Bottles
00718-01	BEACH-1	01/07/20	11:00	Soil	JH	X	X	X		X	X	X	X	X	X	X		
-02	BEACH-2		11:15															
-03	BEACH-3		11:30															
-04	BEACH-4		11:45															
-05	BEACH-5		12:00															
-06	BEACH-6		12:15															
-07	BEACH-7		12:30															
-08	BEACH-8		12:45															
-09	LEDGE-8 (TAN)		13:15															
-10	LEDGE-6 (GREY)		13:30															
					Container Type	V	A	A		A	A	B	A	A	A	A		
					Preservative	F/O	A	A		A	A	A	A	A	A	A		

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H= $Na_2S_2O_3$, I= Ascorbic Acid, J= NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	01/07/19	[signature]	1/8/20 1124

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

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

Method Blank Summary
Form 4
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	**Project Number**	: 19-2000
Lab Sample ID	: WG1328935-5	**Lab File ID**	: VC200110A04
Instrument ID	: CHARLIE		
Matrix	: SOIL	**Analysis Date**	: 01/10/20 11:32

Client Sample No.	Lab Sample ID	Analysis Date
WG1328935-3LCS	WG1328935-3	01/10/20 10:09
WG1328935-4LCSD	WG1328935-4	01/10/20 11:04
BEACH-1	L2000718-01	01/10/20 14:16
BEACH-2	L2000718-02	01/10/20 14:44
BEACH-3	L2000718-03	01/10/20 15:11
BEACH-4	L2000718-04	01/10/20 15:39
BEACH-5	L2000718-05	01/10/20 16:06
BEACH-6	L2000718-06	01/10/20 16:34
BEACH-7	L2000718-07	01/10/20 17:01
BEACH-8	L2000718-08	01/10/20 17:29
LEDGE-8 (TAN)	L2000718-09	01/10/20 17:57

Method Blank Summary
Form 4
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	**Project Number**	: 19-2000
Lab Sample ID	: WG1329009-5	**Lab File ID**	: V23200110A05
Instrument ID	: VOA123		
Matrix	: SOIL	**Analysis Date**	: 01/10/20 11:54

Client Sample No.	Lab Sample ID	Analysis Date
WG1329009-3LCS	WG1329009-3	01/10/20 10:17
WG1329009-4LCSD	WG1329009-4	01/10/20 10:41
LEDGE-6 (GREY)	L2000718-10	01/10/20 17:55

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/10/20 10:09
Lab File ID	: VC200110A01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1328935-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	118	0
Dichlorodifluoromethane	0.394	0.297	-	24.6*	20	87	.01
Chloromethane	0.451	0.377	-	16.4	20	100	.02
Vinyl chloride	0.562	0.472	-	16	20	95	.02
Bromomethane	0.277	0.238	-	14.1	20	123	.01
Chloroethane	0.395	0.351	-	11.1	20	98	.01
Trichlorofluoromethane	0.717	0.613	-	14.5	20	94	.02
Ethyl ether	0.314	0.279	-	11.1	20	101	.01
1,1-Dichloroethene	0.317	0.338	-	-6.6	20	115	.01
Carbon disulfide	1.075	1.153	-	-7.3	20	125	.02
Freon-113	0.336	0.353	-	-5.1	20	118	.01
Acrolein	0.084	0.087	-	-3.6	20	109	.01
Methylene chloride	0.419	0.359	-	14.3	20	103	0
Acetone	0.137	0.125	-	8.8	20	112	0
trans-1,2-Dichloroethene	0.352	0.317	-	9.9	20	102	0
Methyl acetate	0.331	0.32	-	3.3	20	106	0
Methyl tert-butyl ether	1.12	1.054	-	5.9	20	104	0
tert-Butyl alcohol	0.057	0.057	-	0	20	109	0
Diisopropyl ether	1.473	1.405	-	4.6	20	104	0
1,1-Dichloroethane	0.789	0.71	-	10	20	101	0
Halothane	0.263	0.236	-	10.3	20	101	0
Acrylonitrile	0.155	0.154	-	0.6	20	112	0
Ethyl tert-butyl ether	1.453	1.384	-	4.7	20	105	0
Vinyl acetate	1.122	1.147	-	-2.2	20	106	0
cis-1,2-Dichloroethene	0.398	0.364	-	8.5	20	100	0
2,2-Dichloropropane	0.534	0.489	-	8.4	20	102	0
Bromochloromethane	0.191	0.18	-	5.8	20	101	0
Cyclohexane	0.719	0.61	-	15.2	20	95	0
Chloroform	0.689	0.618	-	10.3	20	100	0
Ethyl acetate	0.432	0.433	-	-0.2	20	104	0
Carbon tetrachloride	0.502	0.439	-	12.5	20	99	0
Tetrahydrofuran	0.137	0.137	-	0	20	100	0
Dibromofluoromethane	0.299	0.294	-	1.7	20	116	0
1,1,1-Trichloroethane	0.555	0.494	-	11	20	99	0
2-Butanone	0.209	0.196	-	6.2	20	97	0
1,1-Dichloropropene	0.47	0.425	-	9.6	20	99	0
Benzene	1.464	1.304	-	10.9	20	100	0
tert-Amyl methyl ether	1.096	1.043	-	4.8	20	104	0
1,2-Dichloroethane-d4	0.326	0.315	-	3.4	20	116	0
1,2-Dichloroethane	0.626	0.577	-	7.8	20	102	0
Methyl cyclohexane	0.576	0.492	-	14.6	20	94	0
Trichloroethene	0.363	0.33	-	9.1	20	99	0
Dibromomethane	0.252	0.242	-	4	20	102	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/10/20 10:09
Lab File ID	: VC200110A01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1328935-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.449	0.415	-	7.6	20	101	0
2-Chloroethyl vinyl ether	0.265	0.256	-	3.4	20	104	0
Bromodichloromethane	0.524	0.507	-	3.2	20	101	0
1,4-Dioxane	0.00475	0.00465*	-	2.1	20	106	0
cis-1,3-Dichloropropene	40	34.716	-	13.2	20	102	0
Chlorobenzene-d5	1	1	-	0	20	125	0
Toluene-d8	1.305	1.261	-	3.4	20	121	-.01
Toluene	1.14	0.965	-	15.4	20	100	0
4-Methyl-2-pentanone	0.237	0.214	-	9.7	20	105	0
Tetrachloroethene	0.433	0.374	-	13.6	20	99	0
trans-1,3-Dichloropropene	40	33.415	-	16.5	20	104	-.01
Ethyl methacrylate	0.659	0.579	-	12.1	20	103	-.01
1,1,2-Trichloroethane	0.377	0.339	-	10.1	20	103	0
Chlorodibromomethane	0.492	0.467	-	5.1	20	102	0
1,3-Dichloropropane	0.763	0.678	-	11.1	20	102	-.01
1,2-Dibromoethane	0.426	0.397	-	6.8	20	102	0
2-Hexanone	0.399	0.357	-	10.5	20	103	0
Chlorobenzene	1.329	1.146	-	13.8	20	102	0
Ethylbenzene	2.187	1.885	-	13.8	20	101	0
1,1,1,2-Tetrachloroethane	0.468	0.422	-	9.8	20	100	-.01
p/m Xylene	0.822	0.731	-	11.1	20	101	0
o Xylene	0.812	0.735	-	9.5	20	102	0
Styrene	80	63.466	-	20.7*	20	101	-.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	128	0
Bromoform	0.633	0.548	-	13.4	20	104	0
Isopropylbenzene	3.863	3.217	-	16.7	20	102	0
4-Bromofluorobenzene	1	0.968	-	3.2	20	129	0
Bromobenzene	1.034	0.848	-	18	20	102	0
n-Propylbenzene	4.892	3.977	-	18.7	20	101	0
1,4-Dichlorobutane	1.785	1.517	-	15	20	102	0
1,1,2,2-Tetrachloroethane	1.164	1.01	-	13.2	20	104	0
4-Ethyltoluene	4.029	3.369	-	16.4	20	103	0
2-Chlorotoluene	2.968	2.388	-	19.5	20	101	0
1,3,5-Trimethylbenzene	3.427	2.825	-	17.6	20	102	0
1,2,3-Trichloropropane	0.96	0.789	-	17.8	20	105	0
trans-1,4-Dichloro-2-buten	0.385	0.349	-	9.4	20	104	0
4-Chlorotoluene	3.073	2.512	-	18.3	20	103	0
tert-Butylbenzene	2.745	2.274	-	17.2	20	102	0
1,2,4-Trimethylbenzene	3.364	2.874	-	14.6	20	104	0
sec-Butylbenzene	4.306	3.518	-	18.3	20	101	0
p-Isopropyltoluene	3.556	2.984	-	16.1	20	102	0
1,3-Dichlorobenzene	1.968	1.662	-	15.5	20	104	0
1,4-Dichlorobenzene	2.076	1.713	-	17.5	20	104	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/10/20 10:09
Lab File ID	: VC200110A01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1328935-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	2.129	1.842	-	13.5	20	104	0
n-Butylbenzene	3.549	2.93	-	17.4	20	101	0
1,2-Dichlorobenzene	1.901	1.599	-	15.9	20	104	0
1,2,4,5-Tetramethylbenzene	3.5	3.102	-	11.4	20	106	0
1,2-Dibromo-3-chloropropan	40	32.212	-	19.5	20	108	0
1,3,5-Trichlorobenzene	1.407	1.2	-	14.7	20	105	0
Hexachlorobutadiene	0.571	0.459	-	19.6	20	103	0
1,2,4-Trichlorobenzene	1.271	1.139	-	10.4	20	110	0
Naphthalene	3.217	3	-	6.7	20	112	0
1,2,3-Trichlorobenzene	1.231	1.063	-	13.6	20	109	0

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: VOA123	Calibration Date	: 01/10/20 10:17
Lab File ID	: V23200110A01	Init. Calib. Date(s)	: 01/06/20 01/07/20
Sample No	: WG1329009-2	Init. Calib. Times	: 23:12 02:25
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	81	0
Dichlorodifluoromethane	0.302	0.298	-	1.3	20	76	0
Chloromethane	0.341	0.357	-	-4.7	20	90	0
Vinyl chloride	0.274	0.304	-	-10.9	20	86	0
Bromomethane	40	53.93	-	-34.8*	20	117	0
Chloroethane	0.171	0.197	-	-15.2	20	88	.01
Trichlorofluoromethane	0.382	0.408	-	-6.8	20	80	0
Ethyl ether	0.151	0.166	-	-9.9	20	86	0
1,1-Dichloroethene	0.236	0.246	-	-4.2	20	81	0
Carbon disulfide	0.813	0.83	-	-2.1	20	85	0
Freon-113	0.247	0.253	-	-2.4	20	77	0
Acrolein	0.059	0.065	-	-10.2	20	96	0
Methylene chloride	0.275	0.311	-	-13.1	20	90	0
Acetone	40	45.446	-	-13.6	20	92	0
trans-1,2-Dichloroethene	0.269	0.295	-	-9.7	20	85	0
Methyl acetate	0.244	0.275	-	-12.7	20	95	0
Methyl tert-butyl ether	0.804	0.89	-	-10.7	20	88	0
tert-Butyl alcohol	0.043	0.047*	-	-9.3	20	89	0
Diisopropyl ether	0.854	1.003	-	-17.4	20	92	0
1,1-Dichloroethane	0.465	0.532	-	-14.4	20	89	0
Halothane	0.217	0.232	-	-6.9	20	82	0
Acrylonitrile	0.1	0.119	-	-19	20	93	0
Ethyl tert-butyl ether	0.839	0.952	-	-13.5	20	89	0
Vinyl acetate	0.714	0.875	-	-22.5*	20	97	0
cis-1,2-Dichloroethene	0.299	0.33	-	-10.4	20	86	0
2,2-Dichloropropane	0.407	0.454	-	-11.5	20	88	0
Bromochloromethane	0.157	0.169	-	-7.6	20	82	0
Cyclohexane	0.42	0.433	-	-3.1	20	80	0
Chloroform	0.481	0.533	-	-10.8	20	87	0
Ethyl acetate	0.328	0.365	-	-11.3	20	93	0
Carbon tetrachloride	0.401	0.415	-	-3.5	20	80	0
Tetrahydrofuran	0.121	0.136	-	-12.4	20	92	0
Dibromofluoromethane	0.314	0.309	-	1.6	20	79	0
1,1,1-Trichloroethane	0.419	0.458	-	-9.3	20	83	0
2-Butanone	0.156	0.177	-	-13.5	20	96	0
1,1-Dichloropropene	0.359	0.374	-	-4.2	20	83	0
Benzene	1.026	1.15	-	-12.1	20	87	0
tert-Amyl methyl ether	0.803	0.881	-	-9.7	20	86	0
1,2-Dichloroethane-d4	0.3	0.3	-	0	20	82	0
1,2-Dichloroethane	0.372	0.414	-	-11.3	20	88	0
Methyl cyclohexane	0.445	0.443	-	0.4	20	77	0
Trichloroethene	0.276	0.303	-	-9.8	20	85	0
Dibromomethane	0.183	0.202	-	-10.4	20	86	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: VOA123	Calibration Date	: 01/10/20 10:17
Lab File ID	: V23200110A01	Init. Calib. Date(s)	: 01/06/20 01/07/20
Sample No	: WG1329009-2	Init. Calib. Times	: 23:12 02:25
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.264	0.3	-	-13.6	20	89	0
2-Chloroethyl vinyl ether	0.207	0.23	-	-11.1	20	87	0
Bromodichloromethane	0.394	0.438	-	-11.2	20	86	0
1,4-Dioxane	0.00424	0.00442*	-	-4.2	20	82	0
cis-1,3-Dichloropropene	0.462	0.518	-	-12.1	20	87	0
Chlorobenzene-d5	1	1	-	0	20	93	0
Toluene-d8	1.155	1.08	-	6.5	20	87	0
Toluene	0.729	0.687	-	5.8	20	85	0
4-Methyl-2-pentanone	0.128	0.126	-	1.6	20	90	0
Tetrachloroethene	0.319	0.289	-	9.4	20	79	0
trans-1,3-Dichloropropene	0.461	0.45	-	2.4	20	88	0
Ethyl methacrylate	0.41	0.384	-	6.3	20	85	0
1,1,2-Trichloroethane	0.226	0.215	-	4.9	20	86	0
Chlorodibromomethane	0.355	0.339	-	4.5	20	84	0
1,3-Dichloropropane	0.45	0.435	-	3.3	20	87	0
1,2-Dibromoethane	0.297	0.28	-	5.7	20	85	0
2-Hexanone	0.26	0.237	-	8.8	20	90	0
Chlorobenzene	0.866	0.813	-	6.1	20	85	0
Ethylbenzene	1.405	1.316	-	6.3	20	84	0
1,1,1,2-Tetrachloroethane	0.33	0.313	-	5.2	20	83	0
p/m Xylene	0.554	0.524	-	5.4	20	84	0
o Xylene	0.544	0.512	-	5.9	20	84	0
Styrene	0.928	0.883	-	4.8	20	84	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	94	0
Bromoform	0.434	0.402	-	7.4	20	84	0
Isopropylbenzene	2.505	2.275	-	9.2	20	82	0
4-Bromofluorobenzene	0.936	0.943	-	-0.7	20	94	0
Bromobenzene	0.676	0.601	-	11.1	20	81	0
n-Propylbenzene	2.904	2.687	-	7.5	20	83	0
1,4-Dichlorobutane	0.838	0.792	-	5.5	20	89	0
1,1,2,2-Tetrachloroethane	0.667	0.626	-	6.1	20	87	0
4-Ethyltoluene	2.558	2.348	-	8.2	20	83	0
2-Chlorotoluene	2.026	1.867	-	7.8	20	84	0
1,3,5-Trimethylbenzene	2.124	1.941	-	8.6	20	83	0
1,2,3-Trichloropropane	0.537	0.502	-	6.5	20	87	0
trans-1,4-Dichloro-2-buten	0.207	0.204	-	1.4	20	91	0
4-Chlorotoluene	1.826	1.706	-	6.6	20	85	0
tert-Butylbenzene	1.862	1.651	-	11.3	20	81	0
1,2,4-Trimethylbenzene	2.144	1.963	-	8.4	20	83	0
sec-Butylbenzene	2.7	2.434	-	9.9	20	81	0
p-Isopropyltoluene	2.394	2.164	-	9.6	20	81	0
1,3-Dichlorobenzene	1.309	1.189	-	9.2	20	83	0
1,4-Dichlorobenzene	1.314	1.201	-	8.6	20	84	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2000718
Project Name	: EPSILON ASSOC SAND SAMP	**Project Number**	: 19-2000
Instrument ID	: VOA123	**Calibration Date**	: 01/10/20 10:17
Lab File ID	: V23200110A01	**Init. Calib. Date(s)**	: 01/06/20 01/07/20
Sample No	: WG1329009-2	**Init. Calib. Times**	: 23:12 02:25
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.478	1.346	-	8.9	20	82	0
n-Butylbenzene	2.124	1.98	-	6.8	20	84	0
1,2-Dichlorobenzene	1.223	1.113	-	9	20	84	0
1,2,4,5-Tetramethylbenzene	2.319	2.168	-	6.5	20	84	0
1,2-Dibromo-3-chloropropan	0.133	0.121	-	9	20	83	0
1,3,5-Trichlorobenzene	0.93	0.858	-	7.7	20	83	0
Hexachlorobutadiene	0.419	0.362	-	13.6	20	78	0
1,2,4-Trichlorobenzene	0.846	0.782	-	7.6	20	84	0
Naphthalene	2.205	2.067	-	6.3	20	85	0
1,2,3-Trichlorobenzene	0.785	0.717	-	8.7	20	83	0

*** Value outside of QC limits.**

ANALYTICAL REPORT

Lab Number:	L2001099
Client:	OHI Engineering Incorporated 44 Wood Avenue Mansfield, MA 02048
ATTN:	James Borrebach
Phone:	(508) 339-3929
Project Name:	EPSILON ASSOC SAND SAMP
Project Number:	19-2000
Report Date:	01/20/20

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-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

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

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2001099
Report Date: 01/20/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2001099-01	TIDAL-1	SOIL	NANTUCKET, MA	01/08/20 15:00	01/09/20
L2001099-02	TIDAL-2	SOIL	NANTUCKET, MA	01/08/20 15:15	01/09/20
L2001099-03	TIDAL-3	SOIL	NANTUCKET, MA	01/08/20 15:30	01/09/20
L2001099-04	TIDAL-4	SOIL	NANTUCKET, MA	01/08/20 15:45	01/09/20
L2001099-05	TIDAL-5	SOIL	NANTUCKET, MA	01/08/20 16:00	01/09/20
L2001099-06	TIDAL-6	SOIL	NANTUCKET, MA	01/08/20 16:15	01/09/20
L2001099-07	TIDAL-7	SOIL	NANTUCKET, MA	01/08/20 16:30	01/09/20
L2001099-08	TIDAL-8	SOIL	NANTUCKET, MA	01/08/20 16:45	01/09/20
L2001099-09	LEDGE-7 (GREY)	SOIL	NANTUCKET, MA	01/08/20 14:00	01/09/20
L2001099-10	LEDGE-8 (GREY)	SOIL	NANTUCKET, MA	01/08/20 14:30	01/09/20
L2001099-11	LEDGE-17	SOIL	NANTUCKET, MA	01/08/20 00:00	01/09/20
L2001099-12	LEDGE-18	SOIL	NANTUCKET, MA	01/08/20 00:00	01/09/20
L2001099-13	LEDGE-19	SOIL	NANTUCKET, MA	01/08/20 00:00	01/09/20

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

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:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Sample Receipt

L2001099-01 through -08: The Client ID was obtained from the container labels, at the client's request.

L2001099-11, -12, and -13: Samples identified as "LEDGE-17", "LEDGE-18", and "LEDGE-19" were received, but not listed on the Chain of Custody. At the client's request, these samples were not analyzed.

Volatile Organics

In reference to question H:

The initial calibration, associated with L2001099-01 through -10, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0033), as well as the average response factor for 1,4-dioxane.

The continuing calibration standard, associated with L2001099-01 through -10, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

PAHs

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

Case Narrative (continued)

Non-MCP Related Narratives

Phosphorus, Total

L2001099-02 and -03: The sample has an elevated detection limit due to the dilution required by the sample matrix.

Phosphate, Total

L2001099-02 and -03: The sample has an elevated detection limit due to the dilution required by the sample matrix.

Coliform, Total (MPN)

L2001099-10: The result is estimated due to the elevated concentration in the sample. Due to the expiration of the method required holding time, re-analysis could not be performed.

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: 01/20/20

QC OUTLIER SUMMARY REPORT

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2001099

Report Date: 01/20/20

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

ORGANICS

VOLATILES

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01
Client ID: TIDAL-1
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 19:56
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.2	--	1
1,1-Dichloroethane	ND		ug/kg	1.6	--	1
Chloroform	ND		ug/kg	2.5	--	1
Carbon tetrachloride	ND		ug/kg	1.6	--	1
1,2-Dichloropropane	ND		ug/kg	1.6	--	1
Dibromochloromethane	ND		ug/kg	1.6	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.6	--	1
Tetrachloroethene	ND		ug/kg	0.82	--	1
Chlorobenzene	ND		ug/kg	0.82	--	1
Trichlorofluoromethane	ND		ug/kg	6.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.6	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.82	--	1
Bromodichloromethane	ND		ug/kg	0.82	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.6	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.82	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.82	--	1
1,1-Dichloropropene	ND		ug/kg	0.82	--	1
Bromoform	ND		ug/kg	6.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.82	--	1
Benzene	ND		ug/kg	0.82	--	1
Toluene	ND		ug/kg	1.6	--	1
Ethylbenzene	ND		ug/kg	1.6	--	1
Chloromethane	ND		ug/kg	6.6	--	1
Bromomethane	ND		ug/kg	3.3	--	1
Vinyl chloride	ND		ug/kg	1.6	--	1
Chloroethane	ND		ug/kg	3.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.6	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.5	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01 Date Collected: 01/08/20 15:00

Client ID: TIDAL-1 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.82	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.3	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.3	--	1
Methyl tert butyl ether	ND		ug/kg	3.3	--	1
p/m-Xylene	ND		ug/kg	3.3	--	1
o-Xylene	ND		ug/kg	1.6	--	1
Xylenes, Total	ND		ug/kg	1.6	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.6	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.6	--	1
Dibromomethane	ND		ug/kg	3.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.3	--	1
Styrene	ND		ug/kg	1.6	--	1
Dichlorodifluoromethane	ND		ug/kg	16	--	1
Acetone	ND		ug/kg	41	--	1
Carbon disulfide	ND		ug/kg	16	--	1
Methyl ethyl ketone	ND		ug/kg	16	--	1
Methyl isobutyl ketone	ND		ug/kg	16	--	1
2-Hexanone	ND		ug/kg	16	--	1
Bromochloromethane	ND		ug/kg	3.3	--	1
Tetrahydrofuran	ND		ug/kg	6.6	--	1
2,2-Dichloropropane	ND		ug/kg	3.3	--	1
1,2-Dibromoethane	ND		ug/kg	1.6	--	1
1,3-Dichloropropane	ND		ug/kg	3.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.82	--	1
Bromobenzene	ND		ug/kg	3.3	--	1
n-Butylbenzene	ND		ug/kg	1.6	--	1
sec-Butylbenzene	ND		ug/kg	1.6	--	1
tert-Butylbenzene	ND		ug/kg	3.3	--	1
o-Chlorotoluene	ND		ug/kg	3.3	--	1
p-Chlorotoluene	ND		ug/kg	3.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.9	--	1
Hexachlorobutadiene	ND		ug/kg	6.6	--	1
Isopropylbenzene	ND		ug/kg	1.6	--	1
p-Isopropyltoluene	ND		ug/kg	1.6	--	1
Naphthalene	ND		ug/kg	6.6	--	1
n-Propylbenzene	ND		ug/kg	1.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01 Date Collected: 01/08/20 15:00

Client ID: TIDAL-1 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.3	--	1
Diethyl ether	ND		ug/kg	3.3	--	1
Diisopropyl Ether	ND		ug/kg	3.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.3	--	1
1,4-Dioxane	ND		ug/kg	130	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02
Client ID: TIDAL-2
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:15
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 20:24
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	--	1
1,1-Dichloroethane	ND		ug/kg	1.0	--	1
Chloroform	ND		ug/kg	1.6	--	1
Carbon tetrachloride	ND		ug/kg	1.0	--	1
1,2-Dichloropropane	ND		ug/kg	1.0	--	1
Dibromochloromethane	ND		ug/kg	1.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	--	1
Tetrachloroethene	ND		ug/kg	0.52	--	1
Chlorobenzene	ND		ug/kg	0.52	--	1
Trichlorofluoromethane	ND		ug/kg	4.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	--	1
Bromodichloromethane	ND		ug/kg	0.52	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.52	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.52	--	1
1,1-Dichloropropene	ND		ug/kg	0.52	--	1
Bromoform	ND		ug/kg	4.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.52	--	1
Benzene	ND		ug/kg	0.52	--	1
Toluene	ND		ug/kg	1.0	--	1
Ethylbenzene	ND		ug/kg	1.0	--	1
Chloromethane	ND		ug/kg	4.1	--	1
Bromomethane	ND		ug/kg	2.1	--	1
Vinyl chloride	ND		ug/kg	1.0	--	1
Chloroethane	ND		ug/kg	2.1	--	1
1,1-Dichloroethene	ND		ug/kg	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02 Date Collected: 01/08/20 15:15

Client ID: TIDAL-2 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.52	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	--	1
Methyl tert butyl ether	ND		ug/kg	2.1	--	1
p/m-Xylene	ND		ug/kg	2.1	--	1
o-Xylene	ND		ug/kg	1.0	--	1
Xylenes, Total	ND		ug/kg	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--	1
Dibromomethane	ND		ug/kg	2.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.1	--	1
Styrene	ND		ug/kg	1.0	--	1
Dichlorodifluoromethane	ND		ug/kg	10	--	1
Acetone	ND		ug/kg	26	--	1
Carbon disulfide	ND		ug/kg	10	--	1
Methyl ethyl ketone	ND		ug/kg	10	--	1
Methyl isobutyl ketone	ND		ug/kg	10	--	1
2-Hexanone	ND		ug/kg	10	--	1
Bromochloromethane	ND		ug/kg	2.1	--	1
Tetrahydrofuran	ND		ug/kg	4.1	--	1
2,2-Dichloropropane	ND		ug/kg	2.1	--	1
1,2-Dibromoethane	ND		ug/kg	1.0	--	1
1,3-Dichloropropane	ND		ug/kg	2.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.52	--	1
Bromobenzene	ND		ug/kg	2.1	--	1
n-Butylbenzene	ND		ug/kg	1.0	--	1
sec-Butylbenzene	ND		ug/kg	1.0	--	1
tert-Butylbenzene	ND		ug/kg	2.1	--	1
o-Chlorotoluene	ND		ug/kg	2.1	--	1
p-Chlorotoluene	ND		ug/kg	2.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.1	--	1
Hexachlorobutadiene	ND		ug/kg	4.1	--	1
Isopropylbenzene	ND		ug/kg	1.0	--	1
p-Isopropyltoluene	ND		ug/kg	1.0	--	1
Naphthalene	ND		ug/kg	4.1	--	1
n-Propylbenzene	ND		ug/kg	1.0	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02 Date Collected: 01/08/20 15:15

Client ID: TIDAL-2 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	--	1
Diethyl ether	ND		ug/kg	2.1	--	1
Diisopropyl Ether	ND		ug/kg	2.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.1	--	1
1,4-Dioxane	ND		ug/kg	83	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03
Client ID: TIDAL-3
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 20:51
Analyst: NLK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.9	--	1
1,1-Dichloroethane	ND		ug/kg	0.98	--	1
Chloroform	ND		ug/kg	1.5	--	1
Carbon tetrachloride	ND		ug/kg	0.98	--	1
1,2-Dichloropropane	ND		ug/kg	0.98	--	1
Dibromochloromethane	ND		ug/kg	0.98	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.98	--	1
Tetrachloroethene	ND		ug/kg	0.49	--	1
Chlorobenzene	ND		ug/kg	0.49	--	1
Trichlorofluoromethane	ND		ug/kg	3.9	--	1
1,2-Dichloroethane	ND		ug/kg	0.98	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.49	--	1
Bromodichloromethane	ND		ug/kg	0.49	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.98	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.49	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.49	--	1
1,1-Dichloropropene	ND		ug/kg	0.49	--	1
Bromoform	ND		ug/kg	3.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.49	--	1
Benzene	ND		ug/kg	0.49	--	1
Toluene	ND		ug/kg	0.98	--	1
Ethylbenzene	ND		ug/kg	0.98	--	1
Chloromethane	ND		ug/kg	3.9	--	1
Bromomethane	ND		ug/kg	2.0	--	1
Vinyl chloride	ND		ug/kg	0.98	--	1
Chloroethane	ND		ug/kg	2.0	--	1
1,1-Dichloroethene	ND		ug/kg	0.98	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03 Date Collected: 01/08/20 15:30

Client ID: TIDAL-3 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.49	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	--	1
Methyl tert butyl ether	ND		ug/kg	2.0	--	1
p/m-Xylene	ND		ug/kg	2.0	--	1
o-Xylene	ND		ug/kg	0.98	--	1
Xylenes, Total	ND		ug/kg	0.98	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.98	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.98	--	1
Dibromomethane	ND		ug/kg	2.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.0	--	1
Styrene	ND		ug/kg	0.98	--	1
Dichlorodifluoromethane	ND		ug/kg	9.8	--	1
Acetone	ND		ug/kg	24	--	1
Carbon disulfide	ND		ug/kg	9.8	--	1
Methyl ethyl ketone	ND		ug/kg	9.8	--	1
Methyl isobutyl ketone	ND		ug/kg	9.8	--	1
2-Hexanone	ND		ug/kg	9.8	--	1
Bromochloromethane	ND		ug/kg	2.0	--	1
Tetrahydrofuran	ND		ug/kg	3.9	--	1
2,2-Dichloropropane	ND		ug/kg	2.0	--	1
1,2-Dibromoethane	ND		ug/kg	0.98	--	1
1,3-Dichloropropane	ND		ug/kg	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.49	--	1
Bromobenzene	ND		ug/kg	2.0	--	1
n-Butylbenzene	ND		ug/kg	0.98	--	1
sec-Butylbenzene	ND		ug/kg	0.98	--	1
tert-Butylbenzene	ND		ug/kg	2.0	--	1
o-Chlorotoluene	ND		ug/kg	2.0	--	1
p-Chlorotoluene	ND		ug/kg	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.9	--	1
Hexachlorobutadiene	ND		ug/kg	3.9	--	1
Isopropylbenzene	ND		ug/kg	0.98	--	1
p-Isopropyltoluene	ND		ug/kg	0.98	--	1
Naphthalene	ND		ug/kg	3.9	--	1
n-Propylbenzene	ND		ug/kg	0.98	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03 Date Collected: 01/08/20 15:30

Client ID: TIDAL-3 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--	1
Diethyl ether	ND		ug/kg	2.0	--	1
Diisopropyl Ether	ND		ug/kg	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--	1
1,4-Dioxane	ND		ug/kg	78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04
Client ID: TIDAL-4
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 21:18
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.4	--	1
1,1-Dichloroethane	ND		ug/kg	0.89	--	1
Chloroform	ND		ug/kg	1.3	--	1
Carbon tetrachloride	ND		ug/kg	0.89	--	1
1,2-Dichloropropane	ND		ug/kg	0.89	--	1
Dibromochloromethane	ND		ug/kg	0.89	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.89	--	1
Tetrachloroethene	ND		ug/kg	0.44	--	1
Chlorobenzene	ND		ug/kg	0.44	--	1
Trichlorofluoromethane	ND		ug/kg	3.6	--	1
1,2-Dichloroethane	ND		ug/kg	0.89	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.44	--	1
Bromodichloromethane	ND		ug/kg	0.44	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.89	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.44	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.44	--	1
1,1-Dichloropropene	ND		ug/kg	0.44	--	1
Bromoform	ND		ug/kg	3.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.44	--	1
Benzene	ND		ug/kg	0.44	--	1
Toluene	ND		ug/kg	0.89	--	1
Ethylbenzene	ND		ug/kg	0.89	--	1
Chloromethane	ND		ug/kg	3.6	--	1
Bromomethane	ND		ug/kg	1.8	--	1
Vinyl chloride	ND		ug/kg	0.89	--	1
Chloroethane	ND		ug/kg	1.8	--	1
1,1-Dichloroethene	ND		ug/kg	0.89	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04 Date Collected: 01/08/20 15:45

Client ID: TIDAL-4 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.44	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.8	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.8	--	1
Methyl tert butyl ether	ND		ug/kg	1.8	--	1
p/m-Xylene	ND		ug/kg	1.8	--	1
o-Xylene	ND		ug/kg	0.89	--	1
Xylenes, Total	ND		ug/kg	0.89	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.89	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.89	--	1
Dibromomethane	ND		ug/kg	1.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.8	--	1
Styrene	ND		ug/kg	0.89	--	1
Dichlorodifluoromethane	ND		ug/kg	8.9	--	1
Acetone	ND		ug/kg	22	--	1
Carbon disulfide	ND		ug/kg	8.9	--	1
Methyl ethyl ketone	ND		ug/kg	8.9	--	1
Methyl isobutyl ketone	ND		ug/kg	8.9	--	1
2-Hexanone	ND		ug/kg	8.9	--	1
Bromochloromethane	ND		ug/kg	1.8	--	1
Tetrahydrofuran	ND		ug/kg	3.6	--	1
2,2-Dichloropropane	ND		ug/kg	1.8	--	1
1,2-Dibromoethane	ND		ug/kg	0.89	--	1
1,3-Dichloropropane	ND		ug/kg	1.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.44	--	1
Bromobenzene	ND		ug/kg	1.8	--	1
n-Butylbenzene	ND		ug/kg	0.89	--	1
sec-Butylbenzene	ND		ug/kg	0.89	--	1
tert-Butylbenzene	ND		ug/kg	1.8	--	1
o-Chlorotoluene	ND		ug/kg	1.8	--	1
p-Chlorotoluene	ND		ug/kg	1.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.7	--	1
Hexachlorobutadiene	ND		ug/kg	3.6	--	1
Isopropylbenzene	ND		ug/kg	0.89	--	1
p-Isopropyltoluene	ND		ug/kg	0.89	--	1
Naphthalene	ND		ug/kg	3.6	--	1
n-Propylbenzene	ND		ug/kg	0.89	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04 Date Collected: 01/08/20 15:45

Client ID: TIDAL-4 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.8	--	1
Diethyl ether	ND		ug/kg	1.8	--	1
Diisopropyl Ether	ND		ug/kg	1.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.8	--	1
1,4-Dioxane	ND		ug/kg	71	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	101		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05
Client ID: TIDAL-5
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 21:46
Analyst: NLK
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.4	--	1
1,1-Dichloroethane	ND		ug/kg	1.3	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	1.3	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	--	1
Tetrachloroethene	ND		ug/kg	0.64	--	1
Chlorobenzene	ND		ug/kg	0.64	--	1
Trichlorofluoromethane	ND		ug/kg	5.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.64	--	1
Bromodichloromethane	ND		ug/kg	0.64	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.64	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.64	--	1
1,1-Dichloropropene	ND		ug/kg	0.64	--	1
Bromoform	ND		ug/kg	5.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.64	--	1
Benzene	ND		ug/kg	0.64	--	1
Toluene	ND		ug/kg	1.3	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.1	--	1
Bromomethane	ND		ug/kg	2.6	--	1
Vinyl chloride	ND		ug/kg	1.3	--	1
Chloroethane	ND		ug/kg	2.6	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05 Date Collected: 01/08/20 16:00

Client ID: TIDAL-5 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.64	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.6	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.6	--	1
Methyl tert butyl ether	ND		ug/kg	2.6	--	1
p/m-Xylene	ND		ug/kg	2.6	--	1
o-Xylene	ND		ug/kg	1.3	--	1
Xylenes, Total	ND		ug/kg	1.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	2.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.6	--	1
Styrene	ND		ug/kg	1.3	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	32	--	1
Carbon disulfide	ND		ug/kg	13	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	2.6	--	1
Tetrahydrofuran	ND		ug/kg	5.1	--	1
2,2-Dichloropropane	ND		ug/kg	2.6	--	1
1,2-Dibromoethane	ND		ug/kg	1.3	--	1
1,3-Dichloropropane	ND		ug/kg	2.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.64	--	1
Bromobenzene	ND		ug/kg	2.6	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	2.6	--	1
o-Chlorotoluene	ND		ug/kg	2.6	--	1
p-Chlorotoluene	ND		ug/kg	2.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.8	--	1
Hexachlorobutadiene	ND		ug/kg	5.1	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.1	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05 Date Collected: 01/08/20 16:00

Client ID: TIDAL-5 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.6	--	1
Diethyl ether	ND		ug/kg	2.6	--	1
Diisopropyl Ether	ND		ug/kg	2.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.6	--	1
1,4-Dioxane	ND		ug/kg	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06
Client ID: TIDAL-6
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:15
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 22:14
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.7	--	1
1,1-Dichloroethane	ND		ug/kg	1.5	--	1
Chloroform	ND		ug/kg	2.3	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	1.5	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.5	--	1
Tetrachloroethene	ND		ug/kg	0.77	--	1
Chlorobenzene	ND		ug/kg	0.77	--	1
Trichlorofluoromethane	ND		ug/kg	6.2	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.77	--	1
Bromodichloromethane	ND		ug/kg	0.77	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.77	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.77	--	1
1,1-Dichloropropene	ND		ug/kg	0.77	--	1
Bromoform	ND		ug/kg	6.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.77	--	1
Benzene	ND		ug/kg	0.77	--	1
Toluene	ND		ug/kg	1.5	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	6.2	--	1
Bromomethane	ND		ug/kg	3.1	--	1
Vinyl chloride	ND		ug/kg	1.5	--	1
Chloroethane	ND		ug/kg	3.1	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.3	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06 Date Collected: 01/08/20 16:15

Client ID: TIDAL-6 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.77	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.1	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.1	--	1
Methyl tert butyl ether	ND		ug/kg	3.1	--	1
p/m-Xylene	ND		ug/kg	3.1	--	1
o-Xylene	ND		ug/kg	1.5	--	1
Xylenes, Total	ND		ug/kg	1.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	3.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.1	--	1
Styrene	ND		ug/kg	1.5	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	39	--	1
Carbon disulfide	ND		ug/kg	15	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	3.1	--	1
Tetrahydrofuran	ND		ug/kg	6.2	--	1
2,2-Dichloropropane	ND		ug/kg	3.1	--	1
1,2-Dibromoethane	ND		ug/kg	1.5	--	1
1,3-Dichloropropane	ND		ug/kg	3.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.77	--	1
Bromobenzene	ND		ug/kg	3.1	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	3.1	--	1
o-Chlorotoluene	ND		ug/kg	3.1	--	1
p-Chlorotoluene	ND		ug/kg	3.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.6	--	1
Hexachlorobutadiene	ND		ug/kg	6.2	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	6.2	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06 Date Collected: 01/08/20 16:15

Client ID: TIDAL-6 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.1	--	1
Diethyl ether	ND		ug/kg	3.1	--	1
Diisopropyl Ether	ND		ug/kg	3.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.1	--	1
1,4-Dioxane	ND		ug/kg	120	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07
Client ID: TIDAL-7
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 22:41
Analyst: NLK
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.2	--	1
1,1-Dichloroethane	ND		ug/kg	1.4	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	1.4	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	--	1
Tetrachloroethene	ND		ug/kg	0.72	--	1
Chlorobenzene	ND		ug/kg	0.72	--	1
Trichlorofluoromethane	ND		ug/kg	5.8	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.72	--	1
Bromodichloromethane	ND		ug/kg	0.72	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.72	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.72	--	1
1,1-Dichloropropene	ND		ug/kg	0.72	--	1
Bromoform	ND		ug/kg	5.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.72	--	1
Benzene	ND		ug/kg	0.72	--	1
Toluene	ND		ug/kg	1.4	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	5.8	--	1
Bromomethane	ND		ug/kg	2.9	--	1
Vinyl chloride	ND		ug/kg	1.4	--	1
Chloroethane	ND		ug/kg	2.9	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07 Date Collected: 01/08/20 16:30

Client ID: TIDAL-7 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.72	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.9	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.9	--	1
Methyl tert butyl ether	ND		ug/kg	2.9	--	1
p/m-Xylene	ND		ug/kg	2.9	--	1
o-Xylene	ND		ug/kg	1.4	--	1
Xylenes, Total	ND		ug/kg	1.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	2.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.9	--	1
Styrene	ND		ug/kg	1.4	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	36	--	1
Carbon disulfide	ND		ug/kg	14	--	1
Methyl ethyl ketone	ND		ug/kg	14	--	1
Methyl isobutyl ketone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Bromochloromethane	ND		ug/kg	2.9	--	1
Tetrahydrofuran	ND		ug/kg	5.8	--	1
2,2-Dichloropropane	ND		ug/kg	2.9	--	1
1,2-Dibromoethane	ND		ug/kg	1.4	--	1
1,3-Dichloropropane	ND		ug/kg	2.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.72	--	1
Bromobenzene	ND		ug/kg	2.9	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	2.9	--	1
o-Chlorotoluene	ND		ug/kg	2.9	--	1
p-Chlorotoluene	ND		ug/kg	2.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.3	--	1
Hexachlorobutadiene	ND		ug/kg	5.8	--	1
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	5.8	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07 Date Collected: 01/08/20 16:30

Client ID: TIDAL-7 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.9	--	1
Diethyl ether	ND		ug/kg	2.9	--	1
Diisopropyl Ether	ND		ug/kg	2.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.9	--	1
1,4-Dioxane	ND		ug/kg	120	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	104		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08
Client ID: TIDAL-8
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 23:08
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	9.0	--	1
1,1-Dichloroethane	ND		ug/kg	1.8	--	1
Chloroform	ND		ug/kg	2.7	--	1
Carbon tetrachloride	ND		ug/kg	1.8	--	1
1,2-Dichloropropane	ND		ug/kg	1.8	--	1
Dibromochloromethane	ND		ug/kg	1.8	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.8	--	1
Tetrachloroethene	ND		ug/kg	0.90	--	1
Chlorobenzene	ND		ug/kg	0.90	--	1
Trichlorofluoromethane	ND		ug/kg	7.2	--	1
1,2-Dichloroethane	ND		ug/kg	1.8	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.90	--	1
Bromodichloromethane	ND		ug/kg	0.90	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.8	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.90	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.90	--	1
1,1-Dichloropropene	ND		ug/kg	0.90	--	1
Bromoform	ND		ug/kg	7.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.90	--	1
Benzene	ND		ug/kg	0.90	--	1
Toluene	ND		ug/kg	1.8	--	1
Ethylbenzene	ND		ug/kg	1.8	--	1
Chloromethane	ND		ug/kg	7.2	--	1
Bromomethane	ND		ug/kg	3.6	--	1
Vinyl chloride	ND		ug/kg	1.8	--	1
Chloroethane	ND		ug/kg	3.6	--	1
1,1-Dichloroethene	ND		ug/kg	1.8	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.7	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08 Date Collected: 01/08/20 16:45

Client ID: TIDAL-8 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.90	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.6	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.6	--	1
Methyl tert butyl ether	ND		ug/kg	3.6	--	1
p/m-Xylene	ND		ug/kg	3.6	--	1
o-Xylene	ND		ug/kg	1.8	--	1
Xylenes, Total	ND		ug/kg	1.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.8	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.8	--	1
Dibromomethane	ND		ug/kg	3.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.6	--	1
Styrene	ND		ug/kg	1.8	--	1
Dichlorodifluoromethane	ND		ug/kg	18	--	1
Acetone	ND		ug/kg	45	--	1
Carbon disulfide	ND		ug/kg	18	--	1
Methyl ethyl ketone	ND		ug/kg	18	--	1
Methyl isobutyl ketone	ND		ug/kg	18	--	1
2-Hexanone	ND		ug/kg	18	--	1
Bromochloromethane	ND		ug/kg	3.6	--	1
Tetrahydrofuran	ND		ug/kg	7.2	--	1
2,2-Dichloropropane	ND		ug/kg	3.6	--	1
1,2-Dibromoethane	ND		ug/kg	1.8	--	1
1,3-Dichloropropane	ND		ug/kg	3.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.90	--	1
Bromobenzene	ND		ug/kg	3.6	--	1
n-Butylbenzene	ND		ug/kg	1.8	--	1
sec-Butylbenzene	ND		ug/kg	1.8	--	1
tert-Butylbenzene	ND		ug/kg	3.6	--	1
o-Chlorotoluene	ND		ug/kg	3.6	--	1
p-Chlorotoluene	ND		ug/kg	3.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.4	--	1
Hexachlorobutadiene	ND		ug/kg	7.2	--	1
Isopropylbenzene	ND		ug/kg	1.8	--	1
p-Isopropyltoluene	ND		ug/kg	1.8	--	1
Naphthalene	ND		ug/kg	7.2	--	1
n-Propylbenzene	ND		ug/kg	1.8	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08 Date Collected: 01/08/20 16:45

Client ID: TIDAL-8 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.6	--	1
Diethyl ether	ND		ug/kg	3.6	--	1
Diisopropyl Ether	ND		ug/kg	3.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.6	--	1
1,4-Dioxane	ND		ug/kg	140	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09
Client ID: LEDGE-7 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/13/20 23:36
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.8	--	1
1,1-Dichloroethane	ND		ug/kg	1.8	--	1
Chloroform	ND		ug/kg	2.6	--	1
Carbon tetrachloride	ND		ug/kg	1.8	--	1
1,2-Dichloropropane	ND		ug/kg	1.8	--	1
Dibromochloromethane	ND		ug/kg	1.8	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.8	--	1
Tetrachloroethene	ND		ug/kg	0.88	--	1
Chlorobenzene	ND		ug/kg	0.88	--	1
Trichlorofluoromethane	ND		ug/kg	7.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.8	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.88	--	1
Bromodichloromethane	ND		ug/kg	0.88	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.8	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.88	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.88	--	1
1,1-Dichloropropene	ND		ug/kg	0.88	--	1
Bromoform	ND		ug/kg	7.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.88	--	1
Benzene	ND		ug/kg	0.88	--	1
Toluene	ND		ug/kg	1.8	--	1
Ethylbenzene	ND		ug/kg	1.8	--	1
Chloromethane	ND		ug/kg	7.0	--	1
Bromomethane	ND		ug/kg	3.5	--	1
Vinyl chloride	ND		ug/kg	1.8	--	1
Chloroethane	ND		ug/kg	3.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.8	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09 Date Collected: 01/08/20 14:00

Client ID: LEDGE-7 (GREY) Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.88	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.5	--	1
Methyl tert butyl ether	ND		ug/kg	3.5	--	1
p/m-Xylene	ND		ug/kg	3.5	--	1
o-Xylene	ND		ug/kg	1.8	--	1
Xylenes, Total	ND		ug/kg	1.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.8	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.8	--	1
Dibromomethane	ND		ug/kg	3.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.5	--	1
Styrene	ND		ug/kg	1.8	--	1
Dichlorodifluoromethane	ND		ug/kg	18	--	1
Acetone	ND		ug/kg	44	--	1
Carbon disulfide	ND		ug/kg	18	--	1
Methyl ethyl ketone	ND		ug/kg	18	--	1
Methyl isobutyl ketone	ND		ug/kg	18	--	1
2-Hexanone	ND		ug/kg	18	--	1
Bromochloromethane	ND		ug/kg	3.5	--	1
Tetrahydrofuran	ND		ug/kg	7.0	--	1
2,2-Dichloropropane	ND		ug/kg	3.5	--	1
1,2-Dibromoethane	ND		ug/kg	1.8	--	1
1,3-Dichloropropane	ND		ug/kg	3.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.88	--	1
Bromobenzene	ND		ug/kg	3.5	--	1
n-Butylbenzene	ND		ug/kg	1.8	--	1
sec-Butylbenzene	ND		ug/kg	1.8	--	1
tert-Butylbenzene	ND		ug/kg	3.5	--	1
o-Chlorotoluene	ND		ug/kg	3.5	--	1
p-Chlorotoluene	ND		ug/kg	3.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.3	--	1
Hexachlorobutadiene	ND		ug/kg	7.0	--	1
Isopropylbenzene	ND		ug/kg	1.8	--	1
p-Isopropyltoluene	ND		ug/kg	1.8	--	1
Naphthalene	ND		ug/kg	7.0	--	1
n-Propylbenzene	ND		ug/kg	1.8	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09 Date Collected: 01/08/20 14:00

Client ID: LEDGE-7 (GREY) Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.5	--	1
Diethyl ether	ND		ug/kg	3.5	--	1
Diisopropyl Ether	ND		ug/kg	3.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.5	--	1
1,4-Dioxane	ND		ug/kg	140	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	104		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10
Client ID: LEDGE-8 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 01/14/20 00:04
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.8	--	1
1,1-Dichloroethane	ND		ug/kg	1.8	--	1
Chloroform	ND		ug/kg	2.6	--	1
Carbon tetrachloride	ND		ug/kg	1.8	--	1
1,2-Dichloropropane	ND		ug/kg	1.8	--	1
Dibromochloromethane	ND		ug/kg	1.8	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.8	--	1
Tetrachloroethene	ND		ug/kg	0.88	--	1
Chlorobenzene	ND		ug/kg	0.88	--	1
Trichlorofluoromethane	ND		ug/kg	7.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.8	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.88	--	1
Bromodichloromethane	ND		ug/kg	0.88	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.8	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.88	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.88	--	1
1,1-Dichloropropene	ND		ug/kg	0.88	--	1
Bromoform	ND		ug/kg	7.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.88	--	1
Benzene	ND		ug/kg	0.88	--	1
Toluene	ND		ug/kg	1.8	--	1
Ethylbenzene	ND		ug/kg	1.8	--	1
Chloromethane	ND		ug/kg	7.1	--	1
Bromomethane	ND		ug/kg	3.5	--	1
Vinyl chloride	ND		ug/kg	1.8	--	1
Chloroethane	ND		ug/kg	3.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.8	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.6	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10 Date Collected: 01/08/20 14:30

Client ID: LEDGE-8 (GREY) Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.88	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.5	--	1
Methyl tert butyl ether	ND		ug/kg	3.5	--	1
p/m-Xylene	ND		ug/kg	3.5	--	1
o-Xylene	ND		ug/kg	1.8	--	1
Xylenes, Total	ND		ug/kg	1.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.8	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.8	--	1
Dibromomethane	ND		ug/kg	3.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.5	--	1
Styrene	ND		ug/kg	1.8	--	1
Dichlorodifluoromethane	ND		ug/kg	18	--	1
Acetone	ND		ug/kg	44	--	1
Carbon disulfide	ND		ug/kg	18	--	1
Methyl ethyl ketone	ND		ug/kg	18	--	1
Methyl isobutyl ketone	ND		ug/kg	18	--	1
2-Hexanone	ND		ug/kg	18	--	1
Bromochloromethane	ND		ug/kg	3.5	--	1
Tetrahydrofuran	ND		ug/kg	7.1	--	1
2,2-Dichloropropane	ND		ug/kg	3.5	--	1
1,2-Dibromoethane	ND		ug/kg	1.8	--	1
1,3-Dichloropropane	ND		ug/kg	3.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.88	--	1
Bromobenzene	ND		ug/kg	3.5	--	1
n-Butylbenzene	ND		ug/kg	1.8	--	1
sec-Butylbenzene	ND		ug/kg	1.8	--	1
tert-Butylbenzene	ND		ug/kg	3.5	--	1
o-Chlorotoluene	ND		ug/kg	3.5	--	1
p-Chlorotoluene	ND		ug/kg	3.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.3	--	1
Hexachlorobutadiene	ND		ug/kg	7.1	--	1
Isopropylbenzene	ND		ug/kg	1.8	--	1
p-Isopropyltoluene	ND		ug/kg	1.8	--	1
Naphthalene	ND		ug/kg	7.1	--	1
n-Propylbenzene	ND		ug/kg	1.8	--	1

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10 Date Collected: 01/08/20 14:30

Client ID: LEDGE-8 (GREY) Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.5	--	1
Diethyl ether	ND		ug/kg	3.5	--	1
Diisopropyl Ether	ND		ug/kg	3.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.5	--	1
1,4-Dioxane	ND		ug/kg	140	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	106		70-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/13/20 19:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-10 Batch: WG1329841-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/13/20 19:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-10 Batch: WG1329841-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/13/20 19:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-10 Batch: WG1329841-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
Diethyl ether	ND		ug/kg	2.0	--
Diisopropyl Ether	ND		ug/kg	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--
1,4-Dioxane	ND		ug/kg	80	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-10 Batch: WG1329841-3 WG1329841-4								
Methylene chloride	107		104		70-130	3		20
1,1-Dichloroethane	120		116		70-130	3		20
Chloroform	116		114		70-130	2		20
Carbon tetrachloride	117		114		70-130	3		20
1,2-Dichloropropane	119		117		70-130	2		20
Dibromochloromethane	110		112		70-130	2		20
1,1,2-Trichloroethane	105		106		70-130	1		20
Tetrachloroethene	112		109		70-130	3		20
Chlorobenzene	107		105		70-130	2		20
Trichlorofluoromethane	114		108		70-130	5		20
1,2-Dichloroethane	113		112		70-130	1		20
1,1,1-Trichloroethane	121		117		70-130	3		20
Bromodichloromethane	122		118		70-130	3		20
trans-1,3-Dichloropropene	99		98		70-130	1		20
cis-1,3-Dichloropropene	107		106		70-130	1		20
1,1-Dichloropropene	124		116		70-130	7		20
Bromoform	96		99		70-130	3		20
1,1,2,2-Tetrachloroethane	95		97		70-130	2		20
Benzene	117		114		70-130	3		20
Toluene	110		106		70-130	4		20
Ethylbenzene	112		109		70-130	3		20
Chloromethane	109		108		70-130	1		20
Bromomethane	123		108		70-130	13		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-10 Batch: WG1329841-3 WG1329841-4								
Vinyl chloride	120		112		70-130	7		20
Chloroethane	118		113		70-130	4		20
1,1-Dichloroethene	115		111		70-130	4		20
trans-1,2-Dichloroethene	121		117		70-130	3		20
Trichloroethene	124		118		70-130	5		20
1,2-Dichlorobenzene	100		102		70-130	2		20
1,3-Dichlorobenzene	103		103		70-130	0		20
1,4-Dichlorobenzene	98		98		70-130	0		20
Methyl tert butyl ether	110		110		70-130	0		20
p/m-Xylene	115		111		70-130	4		20
o-Xylene	114		112		70-130	2		20
cis-1,2-Dichloroethene	119		116		70-130	3		20
Dibromomethane	116		114		70-130	2		20
1,2,3-Trichloropropane	89		91		70-130	2		20
Styrene	98		97		70-130	1		20
Dichlorodifluoromethane	93		92		70-130	1		20
Acetone	102		101		70-130	1		20
Carbon disulfide	115		111		70-130	4		20
Methyl ethyl ketone	107		102		70-130	5		20
Methyl isobutyl ketone	95		98		70-130	3		20
2-Hexanone	97		98		70-130	1		20
Bromochloromethane	118		115		70-130	3		20
Tetrahydrofuran	111		117		70-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-10 Batch: WG1329841-3 WG1329841-4								
2,2-Dichloropropane	124		118		70-130	5		20
1,2-Dibromoethane	108		106		70-130	2		20
1,3-Dichloropropane	106		104		70-130	2		20
1,1,1,2-Tetrachloroethane	112		110		70-130	2		20
Bromobenzene	100		98		70-130	2		20
n-Butylbenzene	107		105		70-130	2		20
sec-Butylbenzene	105		103		70-130	2		20
tert-Butylbenzene	107		104		70-130	3		20
o-Chlorotoluene	102		100		70-130	2		20
p-Chlorotoluene	102		101		70-130	1		20
1,2-Dibromo-3-chloropropane	84		88		70-130	5		20
Hexachlorobutadiene	101		99		70-130	2		20
Isopropylbenzene	108		104		70-130	4		20
p-Isopropyltoluene	108		106		70-130	2		20
Naphthalene	96		100		70-130	4		20
n-Propylbenzene	106		103		70-130	3		20
1,2,3-Trichlorobenzene	96		99		70-130	3		20
1,2,4-Trichlorobenzene	102		102		70-130	0		20
1,3,5-Trimethylbenzene	104		103		70-130	1		20
1,2,4-Trimethylbenzene	106		105		70-130	1		20
Diethyl ether	108		107		70-130	1		20
Diisopropyl Ether	122		118		70-130	3		20
Ethyl-Tert-Butyl-Ether	116		115		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2001099

Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-10 Batch: WG1329841-3 WG1329841-4								
Tertiary-Amyl Methyl Ether	112		112		70-130	0		20
1,4-Dioxane	100		103		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		97		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	100		100		70-130

SEMIVOLATILES

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01
Client ID: TIDAL-1
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 14:11
Analyst: EK
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	79	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	84		30-130
4-Terphenyl-d14	92		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02
Client ID: TIDAL-2
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:15
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 14:36
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	ND		ug/kg	120	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	83	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	83	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	87		30-130
4-Terphenyl-d14	99		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03
Client ID: TIDAL-3
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/16/20 04:12
Analyst: DW
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 01/15/20 09:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	ND		ug/kg	120	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	86	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	86	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		30-130
2-Fluorobiphenyl	83		30-130
4-Terphenyl-d14	102		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04
Client ID: TIDAL-4
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 15:00
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	75	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	80		30-130
4-Terphenyl-d14	95		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05
Client ID: TIDAL-5
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 15:24
Analyst: EK
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	130	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	130	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	130	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	130	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	71	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	71	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		30-130
2-Fluorobiphenyl	80		30-130
4-Terphenyl-d14	90		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06
Client ID: TIDAL-6
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:15
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/11/20 15:48
Analyst: EK
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	76	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	76	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	81		30-130
4-Terphenyl-d14	96		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07
Client ID: TIDAL-7
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/13/20 11:05
Analyst: JRW
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	130	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	130	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	130	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	130	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	70	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	70	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		30-130
2-Fluorobiphenyl	52		30-130
4-Terphenyl-d14	61		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08
Client ID: TIDAL-8
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/13/20 11:29
Analyst: JRW
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	80	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	52		30-130
4-Terphenyl-d14	64		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09
Client ID: LEDGE-7 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/13/20 11:54
Analyst: JRW
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	51		30-130
4-Terphenyl-d14	58		30-130

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10
Client ID: LEDGE-8 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D
Analytical Date: 01/13/20 12:18
Analyst: JRW
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	73	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	73	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		30-130
2-Fluorobiphenyl	44		30-130
4-Terphenyl-d14	49		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 01/10/20 21:08
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 01/10/20 08:54

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-10 Batch: WG1328735-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	99	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	97		30-130
4-Terphenyl-d14	113		30-130

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 01/17/20 00:43
Analyst: DW

Extraction Method: EPA 3546
Extraction Date: 01/14/20 22:11

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 03 Batch: WG1330132-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	98	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		30-130
2-Fluorobiphenyl	99		30-130
4-Terphenyl-d14	109		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-10 Batch: WG1328735-2 WG1328735-3								
Acenaphthene	78		91		40-140	15		30
Fluoranthene	81		92		40-140	13		30
Naphthalene	73		85		40-140	15		30
Benzo(a)anthracene	74		86		40-140	15		30
Benzo(a)pyrene	81		94		40-140	15		30
Benzo(b)fluoranthene	89		102		40-140	14		30
Benzo(k)fluoranthene	77		92		40-140	18		30
Chrysene	70		81		40-140	15		30
Acenaphthylene	77		89		40-140	14		30
Anthracene	78		89		40-140	13		30
Benzo(ghi)perylene	85		99		40-140	15		30
Fluorene	84		96		40-140	13		30
Phenanthrene	82		92		40-140	11		30
Dibenzo(a,h)anthracene	84		98		40-140	15		30
Indeno(1,2,3-cd)pyrene	82		95		40-140	15		30
Pyrene	80		91		40-140	13		30
2-Methylnaphthalene	76		89		40-140	16		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2001099

Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-10 Batch: WG1328735-2 WG1328735-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	72		85		30-130
2-Fluorobiphenyl	83		98		30-130
4-Terphenyl-d14	99		114		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1330132-2 WG1330132-3								
Acenaphthene	92		86		40-140	7		30
Fluoranthene	96		86		40-140	11		30
Naphthalene	93		86		40-140	8		30
Benzo(a)anthracene	92		83		40-140	10		30
Benzo(a)pyrene	96		86		40-140	11		30
Benzo(b)fluoranthene	103		89		40-140	15		30
Benzo(k)fluoranthene	99		91		40-140	8		30
Chrysene	90		82		40-140	9		30
Acenaphthylene	97		88		40-140	10		30
Anthracene	95		86		40-140	10		30
Benzo(ghi)perylene	101		90		40-140	12		30
Fluorene	98		90		40-140	9		30
Phenanthrene	94		85		40-140	10		30
Dibenzo(a,h)anthracene	106		96		40-140	10		30
Indeno(1,2,3-cd)pyrene	100		90		40-140	11		30
Pyrene	96		85		40-140	12		30
2-Methylnaphthalene	97		91		40-140	6		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2001099

Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1330132-2 WG1330132-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	91		85		30-130
2-Fluorobiphenyl	101		92		30-130
4-Terphenyl-d14	109		96		30-130

PETROLEUM HYDROCARBONS

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01
Client ID: TIDAL-1
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 20:11
Analyst: MEO
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	38500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02
Client ID: TIDAL-2
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:15
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 19:39
Analyst: MEO
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 01:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	38500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	72		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03
Client ID: TIDAL-3
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 19:06
Analyst: MEO
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	39700	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	79		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04
Client ID: TIDAL-4
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 18:33
Analyst: MEO
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	79		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05
Client ID: TIDAL-5
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 18:01
Analyst: MEO
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	74		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06
Client ID: TIDAL-6
Sample Location: NANTUCKET, MA

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 17:29
Analyst: MEO
Percent Solids: 90%

Date Collected: 01/08/20 16:15
Date Received: 01/09/20
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	77		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07
Client ID: TIDAL-7
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 16:56
Analyst: MEO
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08
Client ID: TIDAL-8
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 16:24
Analyst: MEO
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	37600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	73		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09
Client ID: LEDGE-7 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 15:51
Analyst: MEO
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	34000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	82		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10
Client ID: LEDGE-8 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 01/12/20 15:19
Analyst: MEO
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 01/11/20 02:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	ND		ug/kg	35000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	79		40-140

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/10/20 16:31
Analyst: MEO

Extraction Method: EPA 3546
Extraction Date: 01/10/20 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01-10 Batch: WG1328669-1					
TPH (C10-C36)	ND		ug/kg	32000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	74		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2001099

Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-10 Batch: WG1328669-2								
TPH (C10-C36)	84		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	74				40-140

METALS

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01
Client ID: TIDAL-1
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	1.20		mg/kg	0.459	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Barium, Total	0.698		mg/kg	0.459	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.459	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Chromium, Total	0.578		mg/kg	0.459	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.30	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.087	--	1	01/11/20 04:40	01/11/20 12:05	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.30	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.459	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC
Zinc, Total	3.51		mg/kg	2.30	--	1	01/10/20 21:33	01/13/20 21:00	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02 Date Collected: 01/08/20 15:15

Client ID: TIDAL-2 Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.502		mg/kg	0.469	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Barium, Total	ND		mg/kg	0.469	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.469	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Chromium, Total	ND		mg/kg	0.469	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.35	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.089	--	1	01/11/20 04:40	01/11/20 12:07	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.35	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.469	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC
Zinc, Total	ND		mg/kg	2.35	--	1	01/10/20 21:33	01/13/20 21:04	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03
Client ID: TIDAL-3
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/kg	0.467	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Barium, Total	ND		mg/kg	0.467	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.467	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Chromium, Total	0.514		mg/kg	0.467	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.34	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.092	--	1	01/11/20 04:40	01/11/20 12:09	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.34	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.467	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC
Zinc, Total	ND		mg/kg	2.34	--	1	01/10/20 21:33	01/13/20 21:09	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04
Client ID: TIDAL-4
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 15:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.475		mg/kg	0.420	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Barium, Total	ND		mg/kg	0.420	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.420	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Chromium, Total	ND		mg/kg	0.420	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.10	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.080	--	1	01/11/20 04:40	01/11/20 12:10	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.10	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.420	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC
Zinc, Total	ND		mg/kg	2.10	--	1	01/10/20 21:33	01/13/20 21:14	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05
Client ID: TIDAL-5
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.718		mg/kg	0.408	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Barium, Total	0.595		mg/kg	0.408	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.408	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Chromium, Total	0.673		mg/kg	0.408	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.04	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.077	--	1	01/11/20 04:40	01/11/20 12:12	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.04	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.408	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC
Zinc, Total	2.50		mg/kg	2.04	--	1	01/10/20 21:33	01/13/20 21:18	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06
Client ID: TIDAL-6
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:15
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.823		mg/kg	0.440	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Barium, Total	0.797		mg/kg	0.440	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.440	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Chromium, Total	0.894		mg/kg	0.440	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.20	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.083	--	1	01/11/20 04:40	01/11/20 12:14	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.20	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.440	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC
Zinc, Total	2.50		mg/kg	2.20	--	1	01/10/20 21:33	01/13/20 21:23	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07
Client ID: TIDAL-7
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	0.611		mg/kg	0.402	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Barium, Total	0.700		mg/kg	0.402	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.402	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Chromium, Total	0.800		mg/kg	0.402	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.01	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.076	--	1	01/11/20 04:40	01/11/20 12:19	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.01	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.402	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC
Zinc, Total	2.49		mg/kg	2.01	--	1	01/10/20 21:33	01/13/20 21:27	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP
Lab Number: L2001099
Project Number: 19-2000
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08
Client ID: TIDAL-8
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 16:45
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/kg	0.464	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Barium, Total	0.598		mg/kg	0.464	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.464	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Chromium, Total	0.464		mg/kg	0.464	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Lead, Total	ND		mg/kg	2.32	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.088	--	1	01/11/20 04:40	01/11/20 12:21	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.32	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.464	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC
Zinc, Total	ND		mg/kg	2.32	--	1	01/10/20 21:33	01/13/20 21:51	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09 Date Collected: 01/08/20 14:00

Client ID: LEDGE-7 (GREY) Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.34		mg/kg	0.410	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Barium, Total	7.05		mg/kg	0.410	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.410	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Chromium, Total	5.23		mg/kg	0.410	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Lead, Total	12.3		mg/kg	2.05	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.079	--	1	01/11/20 04:40	01/11/20 12:22	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.05	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.410	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC
Zinc, Total	14.2		mg/kg	2.05	--	1	01/10/20 21:33	01/13/20 21:55	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10 Date Collected: 01/08/20 14:30

Client ID: LEDGE-8 (GREY) Date Received: 01/09/20

Sample Location: NANTUCKET, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.47		mg/kg	0.425	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Barium, Total	6.93		mg/kg	0.425	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.425	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Chromium, Total	4.83		mg/kg	0.425	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Lead, Total	11.5		mg/kg	2.13	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Mercury, Total	ND		mg/kg	0.080	--	1	01/11/20 04:40	01/11/20 12:24	EPA 7471B	97,7471B	AL
Selenium, Total	ND		mg/kg	2.13	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Silver, Total	ND		mg/kg	0.425	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC
Zinc, Total	12.1		mg/kg	2.13	--	1	01/10/20 21:33	01/13/20 22:00	EPA 3050B	97,6010D	MC

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG1329007-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Barium, Total	ND		mg/kg	0.400	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.400	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Chromium, Total	ND		mg/kg	0.400	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Lead, Total	ND		mg/kg	2.00	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Selenium, Total	ND		mg/kg	2.00	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Silver, Total	ND		mg/kg	0.400	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC
Zinc, Total	ND		mg/kg	2.00	--	1	01/10/20 21:33	01/13/20 19:55	97,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG1329063-1										
Mercury, Total	ND		mg/kg	0.083	--	1	01/11/20 04:40	01/11/20 11:44	97,7471B	AL

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG1329007-2 WG1329007-3 SRM Lot Number: D105-540								
Arsenic, Total	101		99		70-130	2		30
Barium, Total	93		92		75-125	1		30
Cadmium, Total	90		88		75-125	2		30
Chromium, Total	95		92		70-130	3		30
Lead, Total	94		91		71-128	3		30
Selenium, Total	99		96		63-137	3		30
Silver, Total	98		96		69-131	2		30
Zinc, Total	95		91		70-130	4		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG1329063-2 WG1329063-3 SRM Lot Number: D105-540								
Mercury, Total	99		96		60-141	3		30

INORGANICS
&
MISCELLANEOUS

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-01
Client ID: TIDAL-1
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 15:00
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.4		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.1	--	1	-	01/10/20 10:50	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	170	--	1	01/13/20 14:08	01/14/20 13:54	121,4500NH3-H	ML
Phosphorus, Total	10		mg/kg	4.6	--	.8	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	31		mg/kg	14	--	.8	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-02
Client ID: TIDAL-2
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 15:15
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	82.7		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.4		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.1	--	1	-	01/10/20 10:55	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	180	--	1	01/13/20 14:08	01/14/20 13:59	121,4500NH3-H	ML
Phosphorus, Total	ND		mg/kg	11	--	1.8	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	ND		mg/kg	33	--	1.8	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-03
Client ID: TIDAL-3
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 15:30
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	80.9		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.5		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.1	--	1	-	01/10/20 10:56	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	160	--	1	01/13/20 14:08	01/14/20 14:00	121,4500NH3-H	ML
Phosphorus, Total	ND		mg/kg	12	--	1.9	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	ND		mg/kg	35	--	1.9	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-04
Client ID: TIDAL-4
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 15:45
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	92.6		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.5		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.91	--	1	-	01/10/20 10:58	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	160	--	1	01/13/20 14:08	01/14/20 14:01	121,4500NH3-H	ML
Phosphorus, Total	55		mg/kg	5.4	--	1	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	170		mg/kg	16	--	1	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-05
Client ID: TIDAL-5
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 16:00
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	96.0		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.7		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.98	--	1	-	01/10/20 10:59	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	190		mg/kg	150	--	1	01/13/20 14:08	01/14/20 14:02	121,4500NH3-H	ML
Phosphorus, Total	46		mg/kg	4.7	--	.9	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	140		mg/kg	14	--	.9	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-06
Client ID: TIDAL-6
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 16:15
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	89.7		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.9		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/10/20 11:00	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	1100		mg/kg	140	--	1	01/13/20 14:08	01/14/20 14:03	121,4500NH3-H	ML
Phosphorus, Total	110		mg/kg	11	--	2	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	330		mg/kg	33	--	2	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-07
Client ID: TIDAL-7
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 16:30
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	96.9		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.9		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	0.88	--	1	-	01/10/20 11:04	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/13/20 14:08	01/14/20 15:02	121,4500NH3-H	ML
Phosphorus, Total	21		mg/kg	8.8	--	1.7	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	64		mg/kg	26	--	1.7	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-08
Client ID: TIDAL-8
Sample Location: NANTUCKET, MA
Sample Depth:
Matrix: Soil

Date Collected: 01/08/20 16:45
Date Received: 01/09/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	84.7		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	8.0		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.1	--	1	-	01/10/20 11:05	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	ND		mg/kg	170	--	1	01/13/20 14:08	01/14/20 14:05	121,4500NH3-H	ML
Phosphorus, Total	18		mg/kg	12	--	2	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	55		mg/kg	35	--	2	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-09
Client ID: LEDGE-7 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:00
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	535.15		MPN/gm	2	NA	10	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	93.1		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.5		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	1.3		mg/kg	1.0	--	1	-	01/10/20 11:07	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	200		mg/kg	140	--	1	01/13/20 14:08	01/14/20 14:06	121,4500NH3-H	ML
Phosphorus, Total	220		mg/kg	9.7	--	1.8	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	660		mg/kg	29	--	1.8	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

SAMPLE RESULTS

Lab ID: L2001099-10
Client ID: LEDGE-8 (GREY)
Sample Location: NANTUCKET, MA

Date Collected: 01/08/20 14:30
Date Received: 01/09/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
Coliform, Total (MPN)	>=1598.53		MPN/gm	2	NA	10	-	01/13/20 21:20	121,9221B	DP
General Chemistry - Westborough Lab										
Solids, Total	93.2		%	0.100	NA	1	-	01/10/20 11:43	121,2540G	RI
pH (H)	7.1		SU	-	NA	1	-	01/10/20 05:26	1,9045D	JA
Nitrogen, Nitrate/Nitrite	2.0		mg/kg	0.95	--	1	-	01/10/20 11:08	121,4500NO3-F	MR
Nitrogen, Total Kjeldahl	180		mg/kg	160	--	1	01/13/20 14:08	01/14/20 14:07	121,4500NH3-H	ML
Phosphorus, Total	340		mg/kg	24	--	4.5	-	01/13/20 10:00	121,4500P-E	SD
Phosphate, Total	1000		mg/kg	72	--	4.5	-	01/13/20 10:00	121,4500P-E(M)	SD

Project Name: EPSILON ASSOC SAND SAMP **Lab Number:** L2001099

Project Number: 19-2000 **Report Date:** 01/20/20

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): 01-10 Batch: WG1328770-1										
Nitrogen, Nitrate/Nitrite	ND		mg/kg	1.0	--	1	-	01/10/20 10:47	121,4500NO3-F	MR
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1329436-1										
Phosphate, Total	ND		mg/kg	15	--	1	-	01/13/20 10:00	121,4500P-E(M)	SD
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1329438-1										
Phosphorus, Total	ND		mg/kg	4.5	--	.9	-	01/13/20 10:00	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1329524-1										
Nitrogen, Total Kjeldahl	ND		mg/kg	150	--	1	01/13/20 14:08	01/14/20 13:49	121,4500NH3-H	ML
Microbiological Analysis - Westborough Lab for sample(s): 01-10 Batch: WG1329661-1										
Coliform, Total (MPN)	<0.2		MPN/gm	0.2	NA	1	-	01/13/20 21:20	121,9221B	DP

Lab Control Sample Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328651-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1328770-2								
Nitrogen, Nitrate/Nitrite	100		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1329436-2								
Phosphate, Total	84		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1329438-2								
Phosphorus, Total	84		-		52-148	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1329524-2								
Nitrogen, Total Kjeldahl	90		-		83-111	-		26

Matrix Spike Analysis
Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000
Lab Number: L2001099
Report Date: 01/20/20

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): 01-10 QC Batch ID: WG1328770-4 QC Sample: L2001099-01 Client ID: TIDAL-1												
Nitrogen, Nitrate/Nitrite	ND	82	84	102		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1329436-3 QC Sample: L2001099-01 Client ID: TIDAL-1												
Phosphate, Total	31	848	860	98		-	-		75-125	-		25
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1329438-3 QC Sample: L2001099-01 Client ID: TIDAL-1												
Phosphorus, Total	10	275	280	98		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1329524-4 QC Sample: L2001099-01 Client ID: TIDAL-1												
Nitrogen, Total Kjeldahl	ND	4144	3400	82		-	-		43-160	-		26

Lab Duplicate Analysis

Batch Quality Control

Project Name: EPSILON ASSOC SAND SAMP

Project Number: 19-2000

Lab Number: L2001099

Report Date: 01/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328651-2 QC Sample: L2001099-01 Client ID: TIDAL-1						
pH (H)	7.4	7.4	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328770-3 QC Sample: L2001099-01 Client ID: TIDAL-1						
Nitrogen, Nitrate/Nitrite	ND	ND	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1328801-1 QC Sample: L2001099-01 Client ID: TIDAL-1						
Solids, Total	86.1	85.9	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1329436-4 QC Sample: L2001099-01 Client ID: TIDAL-1						
Phosphate, Total	31	28	mg/kg	10		25
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1329438-4 QC Sample: L2001099-01 Client ID: TIDAL-1						
Phosphorus, Total	10	9.0	mg/kg	11		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1329524-3 QC Sample: L2001099-01 Client ID: TIDAL-1						
Nitrogen, Total Kjeldahl	ND	ND	mg/kg	NC		26

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2001099
Report Date: 01/20/20

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(*)
L2001099-01A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-01B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-01C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-01E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-01F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-01G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-01H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-02A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-02B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-02C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-02E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-02F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-02G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-02H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2001099
Report Date: 01/20/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2001099-03A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-03B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-03C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-03E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-03F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-03G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-03H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-04A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-04B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-04C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-04E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-04F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-04G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-04H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-05A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-05B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-05C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2001099
Report Date: 01/20/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2001099-05D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-05E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-05F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-05G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-05H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-06A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-06B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-06C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-06D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-06E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-06F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-06G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-06H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-07A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-07B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-07C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-07D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-07E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-07F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2001099
Report Date: 01/20/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2001099-07G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-07H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-08A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-08B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-08C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-08D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-08E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-08F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-08G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-08H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-09A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)
L2001099-09B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-09C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-09D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-09E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-09F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-09G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-09H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),TPH-DRO-D(14),MCP-PAH-10(14)
L2001099-10A	Vial MeOH preserved	A	NA		4.1	Y	Absent		MCP-8260HLW-10(14)

*Values in parentheses indicate holding time in days

Project Name: EPSILON ASSOC SAND SAMP
Project Number: 19-2000

Lab Number: L2001099
Report Date: 01/20/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2001099-10B	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-10C	Vial water preserved	A	NA		4.1	Y	Absent	10-JAN-20 02:52	MCP-8260HLW-10(14)
L2001099-10D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2001099-10E	Bacteria Cup unpreserved	A	NA		4.1	Y	Absent		T-COLI-MPN(7)
L2001099-10F	Plastic 2oz unpreserved for TS	A	NA		4.1	Y	Absent		TS(7)
L2001099-10G	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-10H	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		TKN-4500(28),TPO4-4500(28),TPHOS-4500(28),PH-9045(1),NO3/NO2-4500(28),MCP-PAH-10(14),TPH-DRO-D(14)
L2001099-11A	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		HOLD()
L2001099-12A	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		HOLD()
L2001099-13A	Glass 250ml/8oz unpreserved	A	NA		4.1	Y	Absent		HOLD()

*Values in parentheses indicate holding time in days

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

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: Data Usability Report

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

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.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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. 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 reporting limit (RL) for the sample.

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

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

Data Qualifiers

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.

Project Name:	EPSILON ASSOC SAND SAMP	**Lab Number:**	L2001099
Project Number:	19-2000	**Report Date:**	01/20/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/9/20

ALPHA Job #: L2001099

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: OHI Engineering
Address: 44 Wood Ave, Mansfield, MA
Phone:
Email:

Project Information

Project Name: Epsilon Assoc Sed Smp
Project Location: Nantucket, MA
Project #: 19-2000
Project Manager: Jim Borcebsch
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: 5-Day TAT

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

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 _____

Additional Project Information:

Hold excess soil for future analyses!!

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; Total Zinc; Total Cyanide; NO3/NO2; Total Kjeldahl N; Phosphorus/Phosphate; pH

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	EPH	VPH	PCB	TPH	Total Zinc	Total Cyanide	NO3/NO2	Total Kjeldahl N	Phosphorus/Phosphate	pH	Sample Comments	Total # Bottles
01099-01	BEACH-1	01/08/20	1500	Soil	JH	X	X	X				X								
02	BEACH-2		1515																	
03	BEACH-3		1530																	
04	BEACH-4		1545																	
05	BEACH-5		1600																	
06	BEACH-6		1615																	
07	BEACH-7		1630																	
08	BEACH-8		1645																	
09	LEDGE-7 (Grey)		1400																	
10	LEDGE-8 (Grey)		1430																	
	Container Type					V	A	A				A	B	A	A	A	A	A		
	Preservative					F/O	A	A				A	A	A	A	A	A	A		

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H= $Na_2S_2O_3$, I= Ascorbic Acid, J= NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	01/09/20 1620	[signature] -AAL	1/9/20 16:00
[signature] -AAL	1/9/20	TGAAL	1/9/20 20:55
TGAAL	1/9/20 21:40	[signature]	1/9/20 21:40

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

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

Method Blank Summary
Form 4
Volatiles

Client	: OHI Engineering Incorporated	**Lab Number**	: L2001099
Project Name	: EPSILON ASSOC SAND SAMP	**Project Number**	: 19-2000
Lab Sample ID	: WG1329841-5	**Lab File ID**	: VC200113B04
Instrument ID	: CHARLIE		
Matrix	: SOIL	**Analysis Date**	: 01/13/20 19:29

Client Sample No.	Lab Sample ID	Analysis Date
WG1329841-3LCS	WG1329841-3	01/13/20 18:06
WG1329841-4LCSD	WG1329841-4	01/13/20 18:34
TIDAL-1	L2001099-01	01/13/20 19:56
TIDAL-2	L2001099-02	01/13/20 20:24
TIDAL-3	L2001099-03	01/13/20 20:51
TIDAL-4	L2001099-04	01/13/20 21:18
TIDAL-5	L2001099-05	01/13/20 21:46
TIDAL-6	L2001099-06	01/13/20 22:14
TIDAL-7	L2001099-07	01/13/20 22:41
TIDAL-8	L2001099-08	01/13/20 23:08
LEDGE-7 (GREY)	L2001099-09	01/13/20 23:36
LEDGE-8 (GREY)	L2001099-10	01/14/20 00:04

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2001099
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/13/20 18:06
Lab File ID	: VC200113B01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1329841-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	93	0
Dichlorodifluoromethane	0.394	0.366	-	7.1	20	85	0
Chloromethane	0.451	0.49	-	-8.6	20	103	0
Vinyl chloride	0.562	0.674	-	-19.9	20	108	0
Bromomethane	0.277	0.339	-	-22.4*	20	139	0
Chloroethane	0.395	0.466	-	-18	20	103	0
Trichlorofluoromethane	0.717	0.82	-	-14.4	20	99	0
Ethyl ether	0.314	0.338	-	-7.6	20	97	0
1,1-Dichloroethene	0.317	0.365	-	-15.1	20	98	0
Carbon disulfide	1.075	1.24	-	-15.3	20	107	0
Freon-113	0.336	0.388	-	-15.5	20	103	0
Acrolein	0.084	0.094	-	-11.9	20	93	0
Methylene chloride	0.419	0.45	-	-7.4	20	102	0
Acetone	0.137	0.139	-	-1.5	20	99	0
trans-1,2-Dichloroethene	0.352	0.426	-	-21*	20	108	0
Methyl acetate	0.331	0.368	-	-11.2	20	97	0
Methyl tert-butyl ether	1.12	1.229	-	-9.7	20	96	0
tert-Butyl alcohol	0.057	0.059	-	-3.5	20	90	0
Diisopropyl ether	1.473	1.797	-	-22*	20	106	0
1,1-Dichloroethane	0.789	0.946	-	-19.9	20	107	0
Halothane	0.263	0.314	-	-19.4	20	106	0
Acrylonitrile	0.155	0.166	-	-7.1	20	96	0
Ethyl tert-butyl ether	1.453	1.689	-	-16.2	20	101	0
Vinyl acetate	1.122	1.351	-	-20.4*	20	98	0
cis-1,2-Dichloroethene	0.398	0.473	-	-18.8	20	102	0
2,2-Dichloropropane	0.534	0.66	-	-23.6*	20	109	0
Bromochloromethane	0.191	0.225	-	-17.8	20	100	0
Cyclohexane	0.719	0.847	-	-17.8	20	104	-.01
Chloroform	0.689	0.803	-	-16.5	20	103	0
Ethyl acetate	0.432	0.483	-	-11.8	20	92	0
Carbon tetrachloride	0.502	0.59	-	-17.5	20	105	0
Tetrahydrofuran	0.137	0.152	-	-10.9	20	87	0
Dibromofluoromethane	0.299	0.299	-	0	20	93	0
1,1,1-Trichloroethane	0.555	0.671	-	-20.9*	20	107	0
2-Butanone	0.209	0.223	-	-6.7	20	87	0
1,1-Dichloropropene	0.47	0.582	-	-23.8*	20	108	0
Benzene	1.464	1.718	-	-17.3	20	104	0
tert-Amyl methyl ether	1.096	1.227	-	-12	20	96	0
1,2-Dichloroethane-d4	0.326	0.323	-	0.9	20	94	0
1,2-Dichloroethane	0.626	0.707	-	-12.9	20	99	0
Methyl cyclohexane	0.576	0.666	-	-15.6	20	100	-.01
Trichloroethene	0.363	0.449	-	-23.7*	20	107	0
Dibromomethane	0.252	0.292	-	-15.9	20	97	-.01

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2001099
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/13/20 18:06
Lab File ID	: VC200113B01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1329841-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.449	0.532	-	-18.5	20	102	0
2-Chloroethyl vinyl ether	0.265	0.285	-	-7.5	20	91	0
Bromodichloromethane	0.524	0.638	-	-21.8*	20	101	0
1,4-Dioxane	0.00475	0.00474*	-	0.2	20	85	0
cis-1,3-Dichloropropene	40	42.914	-	-7.3	20	99	0
Chlorobenzene-d5	1	1	-	0	20	101	0
Toluene-d8	1.305	1.265	-	3.1	20	97	-.01
Toluene	1.14	1.253	-	-9.9	20	105	0
4-Methyl-2-pentanone	0.237	0.226	-	4.6	20	89	0
Tetrachloroethene	0.433	0.487	-	-12.5	20	104	0
trans-1,3-Dichloropropene	40	39.584	-	1	20	99	-.01
Ethyl methacrylate	0.659	0.647	-	1.8	20	93	-.01
1,1,2-Trichloroethane	0.377	0.396	-	-5	20	97	0
Chlorodibromomethane	0.492	0.544	-	-10.6	20	95	0
1,3-Dichloropropane	0.763	0.807	-	-5.8	20	97	-.01
1,2-Dibromoethane	0.426	0.458	-	-7.5	20	94	0
2-Hexanone	0.399	0.387	-	3	20	90	0
Chlorobenzene	1.329	1.421	-	-6.9	20	102	0
Ethylbenzene	2.187	2.459	-	-12.4	20	106	0
1,1,1,2-Tetrachloroethane	0.468	0.524	-	-12	20	101	0
p/m Xylene	0.822	0.945	-	-15	20	105	0
o Xylene	0.812	0.926	-	-14	20	103	0
Styrene	80	78.342	-	2.1	20	101	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	104	0
Bromoform	0.633	0.606	-	4.3	20	93	0
Isopropylbenzene	3.863	4.183	-	-8.3	20	108	0
4-Bromofluorobenzene	1	0.971	-	2.9	20	104	0
Bromobenzene	1.034	1.033	-	0.1	20	101	0
n-Propylbenzene	4.892	5.175	-	-5.8	20	107	0
1,4-Dichlorobutane	1.785	1.746	-	2.2	20	95	0
1,1,2,2-Tetrachloroethane	1.164	1.108	-	4.8	20	93	0
4-Ethyltoluene	4.029	4.288	-	-6.4	20	106	0
2-Chlorotoluene	2.968	3.025	-	-1.9	20	104	0
1,3,5-Trimethylbenzene	3.427	3.563	-	-4	20	105	0
1,2,3-Trichloropropane	0.96	0.852	-	11.2	20	91	0
trans-1,4-Dichloro-2-buten	0.385	0.391	-	-1.6	20	94	0
4-Chlorotoluene	3.073	3.124	-	-1.7	20	103	0
tert-Butylbenzene	2.745	2.928	-	-6.7	20	106	0
1,2,4-Trimethylbenzene	3.364	3.565	-	-6	20	105	0
sec-Butylbenzene	4.306	4.538	-	-5.4	20	106	0
p-Isopropyltoluene	3.556	3.828	-	-7.6	20	106	0
1,3-Dichlorobenzene	1.968	2.037	-	-3.5	20	104	0
1,4-Dichlorobenzene	2.076	2.037	-	1.9	20	100	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: OHI Engineering Incorporated	Lab Number	: L2001099
Project Name	: EPSILON ASSOC SAND SAMP	Project Number	: 19-2000
Instrument ID	: CHARLIE	Calibration Date	: 01/13/20 18:06
Lab File ID	: VC200113B01	Init. Calib. Date(s)	: 01/02/20 01/02/20
Sample No	: WG1329841-2	Init. Calib. Times	: 17:59 21:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	2.129	2.37	-	-11.3	20	108	0
n-Butylbenzene	3.549	3.801	-	-7.1	20	106	0
1,2-Dichlorobenzene	1.901	1.904	-	-0.2	20	100	0
1,2,4,5-Tetramethylbenzene	3.5	3.726	-	-6.5	20	103	0
1,2-Dibromo-3-chloropropan	40	33.666	-	15.8	20	91	0
1,3,5-Trichlorobenzene	1.407	1.488	-	-5.8	20	105	0
Hexachlorobutadiene	0.571	0.578	-	-1.2	20	105	0
1,2,4-Trichlorobenzene	1.271	1.299	-	-2.2	20	102	0
Naphthalene	3.217	3.081	-	4.2	20	93	0
1,2,3-Trichlorobenzene	1.231	1.184	-	3.8	20	99	0

* Value outside of QC limits.

END OF REPORT

44 Wood Avenue
Mansfield, MA 02048
Tel (508) 339-3929
Fax (508) 339-3140

110 Pulpit Hill Road
Amherst, MA 01002
Tel (413) 835-0780

www.OHIengineering.com

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

JAN 28 2020

Siasconset Beach Preservation Fund
c/o Glenn A. Wood, Esq.
Rubin & Rudman LLP
53 State Street
Boston, Massachusetts 02109

RE: NANTUCKET—Wetlands
DEP File No. SE 48-3115
Superseding Order of Conditions
59-119 Baxter Road

Dear Attorney Wood:

Following an in-depth review of the above-referenced file and in accordance with Massachusetts General Laws, Chapter 131, Section 40, the Department of Environmental Protection has issued the enclosed Superseding Order of Conditions (SOC). This Order approves the proposed northern extension to the existing Geotube and a portion of the southern extension subject to certain conditions. The Department has determined that the project area is significant to the statutory interests of flood control, storm damage prevention and the protection of wildlife habitat.

The Notice of Intent (NOI) was jointly filed by the Siasconset Beach Preservation Fund (SBPF) and the Town of Nantucket. The Town owns the beach in the project area. The project proposes an approximately 767 linear foot Geotube extension to the north and an approximately 1,916 linear foot Geotube extension to the south, smaller geotextile returns, planting of vegetation on the face of the coastal bank, and ongoing mitigation (beach nourishment) and monitoring of project performance. As shown on the referenced plans, the proposed design incorporates 4 tiers of Geotubes. The project area currently contains three to four tiers of Geotubes with a total length of approximately 947 feet. The Department has determined that the coastal bank (Sconset Bluff) acts both as a sediment source and as a vertical buffer to elevated storm waters.

The Wetland Regulations at 310 CMR 10.30(3) provides, in part, that a coastal engineering structure "shall be permitted" when required to protect buildings constructed prior to 1978 from storm damage. The expanded project would protect 13 pre-1978 homes in the southern extension and 3 pre-1978 homes in the northern extension. All of the homes on the ocean-side of Baxter Road in the project area are pre-1978 buildings. The project area also includes 2 (vacant) gap lots at 85 and 107/107A Baxter Road. In the Department's judgment, the applicant has demonstrated the need to provide a contiguous Geotube system across the gap lots that can effectively protect pre-1978 homes in the area, including pre-1978 homes on the landward side of Baxter Road. As a

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

result, the Department has determined that the proposed Geotubes between Lots 115 and 63 meets the above-noted performance standard for Coastal Banks.

The enclosed SOC denies the proposed installation of Geotubes at the southern end (Lots 61, 59, and 55) of the approximately 1,916 linear foot southern Geotube extension. The coastal bank is more stable in the area south of lot 63 with extensive vegetation on the face of the coastal bank compared to areas to the north. In addition, the homes on Lots 61 and 59 do not meet the applicant's proposed "imminent" danger criteria that dwellings within 40 feet of the top of the coastal bank need immediate protection from storm damage as discussed in the Notice of Project Change filed with MEPA. In fact, the homes on Lots 61 and 59 are 68 and 65 feet back from the top of the coastal bank, respectively. Further, it is not clear that the homes on Lots 61, 59, and 55 couldn't be relocated to the landward side of Baxter Road and away from the coastal bank. As a result, the Department has determined that the proposed Geotubes on Lots 61, 59 and 55 do not meet the performance standards for Coastal Banks at 310 CMR 10.30 (3). Specifically, the Department has determined that the proposed Geotubes are not required to prevent storm damage at this time and there may be feasible alternatives to a coastal engineering structure. In the case of Lots 61 and 59, relocation of homes to the landward side of Baxter Road may be a feasible alternative to a coastal engineering structure.

The enclosed SOC also denies the proposed installation of Geotubes along the southern end of the proposed project area where a coastal dune fronts the toe of the coastal bank. In the area of Lots 55, 53, 51B and 51A, the coastal dune serves to protect the toe of the coastal bank from erosion, resulting in a dense vegetative cover on the face of the coastal bank. The applicant proposed the installation of Geotubes if and when the coastal dune erodes away and exposes the coastal bank to erosion. In the Department's opinion, the proposed Geotubes on Lots 55, 53, 51B and 51A are not required to prevent storm damage to homes at this time. As a result, the Department has determined that the proposed Geotubes in this area do not meet the performance standards for Coastal Banks at 310 CMR 10.30(3). In addition, the Department has determined that there may be feasible alternatives to a coastal engineering structure, such as building relocation to the landward side of Baxter Road.

Please be advised that any future NOI must demonstrate that there are no feasible alternatives to the Geotubes such as relocation of threatened buildings, that the buildings are at risk of storm damage at the time of the application and that the Geotubes or an alternative coastal structure are necessary to prevent storm damage to pre-1978 buildings.

The MEPA Certificate (EEA#15240) issued on September 20, 2019 by the Secretary of Energy and Environmental Affairs, directed the Department to address concerns with proposed changes to the applicant's mitigation plan and monitoring frequency. The applicant's revised mitigation plan is an adaptive sand mitigation plan that would change the fixed rate of 22 cubic yard per linear foot a year to a flexible rate of 8.8 cy/lf a year or a volume to fill a 22 cy/lf template, whichever is greater. Due to the apparent success of the current mitigation plan in maintaining a walkable beach seaward of the existing Geotubes and the substantial increase in project length, the Department's SOC will require the current mitigation volume of 22 cy/lf a year to remain for the expanded project. In addition, the applicant's revised monitoring plan would change the shoreline change analysis (beach profile) to semi-annual from the current quarterly requirement. Although the Department's Guide to Best Management Practices for

Beach Nourishment Projects recommends semi-annual monitoring, the Department believes that due to the substantial increase in project length and unique circumstances of the project, the current monitoring plan of quarterly shoreline change analysis will remain for the expanded project. Following 3 years of implementing the required mitigation and monitoring plans, the applicants may request the Department to re-assess these plans in accordance with the enclosed SOC.

The Department is aware of recent enforcement action taken by the Nantucket Conservation Commission regarding the use of non-beach compatible nourishment material and the failure to submit beach monitoring reports. The Department supports the Commission's enforcement actions. Failure to provide clean, compatible sediment as mitigation and failure to submit timely quarterly monitoring reports could result in further enforcement action and constitute project failure in accordance with criteria in the enclosed SOC.

In the opinion of the Department the reasons given here are sufficient to justify this SOC. However, the Department reserves the right, should there be further proceedings in this matter, to raise additional issues and present further evidence as may be appropriate.

If you have any questions concerning this matter please contact Nate Corcoran at (508) 946-2723.

Very truly yours,

James Mahala

James Mahala, Chief
Wetlands and Waterways Program

JM/nc
Enclosure
CERTIFIED MAIL # 7017 1450 0000 0281 4220

cc: Nantucket Conservation Commission

Nantucket Board of Selectmen

WPA Form 5 – Superseding Order of Conditions
Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #

SE 48-3115

A. General Information

1. From: **Massachusetts Department of Environmental Protection**
   Issuing Authority
2. This issuance is for (check one): a. ☒ Superseding Order of Conditions
   b. ☐ Amended Superseding Order of Conditions
3. To: Applicant:

   Josh — a. First Name
   Posner — b. Last Name
   Siasconset Beach Preservation Fund (SBPF) — c. Organization
   P.O. Box 2279 — d. Mailing Address Line 1
   Nantucket — e. City/Town
   MA — f. State
   02584 — g. Zip Code

4. Property Owner (if different from applicant):

   a. First Name
   b. Last Name
   See Attached List — c. Organization
   d. Mailing Address Line 1
   e. City/Town
   f. State
   g. Zip Code

5. Project Location:

   59-119 Baxter Road — a. Street Address
   Nantucket — b. City/Town
   c. Assessors Map/Plat Number
   d. Parcel/Lot Number

Latitude and Longitude, if known:
41°16'36.748"N — e. Latitude
69°57'40.559"W — f. Longitude

A. General Information (cont'd)

6. Property recorded at the Registry of Deeds (attach additional information if more than one parcel):

Nantucket
a. County

See attached list
b. Certificate (if registered land)

c. Book

d. Page

7. Dates: 01/05/2018 a. Date NOI Filed; 8/29/2019 b. Date of Site Visit; 6/20/2019 c. Date of Issuance of Local Order

8. Final Approved Plans and Other Documents (attach additional plans or document references):

Expanded Baxter Road and Sconset Bluff Storm Damage Prevention Project Permit Drawings
a. Plan Title

Baird W.F. Baird & Associates Ltd.
b. Prepared By

Gordon G. Thomson, P.E.
c. Signed and Stamped By

10/29/2019
d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act - Following the review of the above-referenced Notice of Intent and based on the information provided in this application, the Department finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

a. ☐ Public Water Supply
b. ☐ Land Containing Shellfish
c. ☐ Prevention of Pollution
d. ☐ Private Water Supply
e. ☐ Fisheries
f. ☒ Protection of Wildlife Habitat
g. ☐ Groundwater Supply
h. ☒ Storm Damage Prevention
i. ☒ Flood Control

2. This Department hereby finds the project, as proposed, is (check one):

Approved subject to:

a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. The Department orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

B. Findings (cont'd)

Denied because:

b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued. A description of the performance standards which the proposed work cannot meet is attached to this Order.

c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order.**

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

3. ☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and wetland boundary (if available) _____ a. linear feet

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. ☐ Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5. ☐ Bordering Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet
6. ☐ Land Under Waterbodies and Waterways	a. square feet	b. square feet	c. square feet	d. square feet
	e. c/y dredged	f. c/y dredged		
7. ☐ Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8. ☐ Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. ☐ Riverfront area	a. total sq. feet	b. total sq. feet		
Sq feet within 100 feet	c. square feet	d. square feet	e. square feet	f. square feet
Sq feet between 100-200 feet	g. square feet	h. square feet	i. square feet	j. square feet

B. Findings (cont'd)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

10. ☐ Designated Port Areas - Indicate size under Land Under the Ocean, below

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
11. ☐ Land Under the Ocean	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
12. ☐ Barrier Beaches - Indicate size under Coastal Beaches and/or Coastal Dunes below.				
13. ☒ Coastal Beaches	104,860 a. square feet	94,680 b. square feet	c. c/y nourish.	d. c/y
14. ☐ Coastal Dunes	a. square feet	b. square feet	c. c/y nourish.	d. c/y
15. ☒ Coastal Banks	2,730 a. linear feet	2,465 b. linear feet		
16. ☐ Rocky Intertidal Shores	a. square feet	b. square feet		
17. ☐ Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. ☐ Land Under Salt Ponds	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
19. ☐ Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet

20. ☐ Fish Runs - Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above

	a. c/y dredged	b. c/y dredged
21. ☒ Land Subject to Coastal Storm Flowage	104,860 a. square feet	94,680 b. square feet

C. General Conditions Under Massachusetts Wetlands Protection Act

(only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.

2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.

3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.

5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.

6. If this Order constitutes an Amended Superseding Order of Conditions, this Amended Superseding Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Superseding Order will expire on _____ unless extended in writing by the Department.

7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.

9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Department on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.

10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

    "Massachusetts Department of Environmental Protection" [or, "MA DEP"]

    "File Number SE48-3115 "

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.

12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Department of Environmental Protection.

13. The work shall conform to the plans and special conditions referenced in this order.

14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Department in writing whether the change is significant enough to require the filing of a new Notice of Intent.

15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Department.

18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Department, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. **The work associated with this Order (the "Project") is** (1) ☐ **is not** (2) ☒ **subject to the Massachusetts Stormwater Standards. If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**

a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;
iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement) for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMPs Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, and acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

g) The responsible party shall:
   1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
   2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
   3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Brief Project Description: The installation of an approximately 767 linear foot Geotube extension to the North and an approximately 1,916 linear foot Geotube extension to the South of the existing Geotube, smaller geotextile returns, planting of vegetation on the face of the bluff, and ongoing mitigation and monitoring of project performance.

Special Conditions (See attached sheet(s) for additional Special Conditions numbered 1 through 22.

D. Findings Under Municipal Wetlands Bylaw or Ordinance

To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no jurisdiction to supersede the local by-law order.

E. Issuance

This Order is valid for three years from the date of issuance, unless otherwise specified as a special condition pursuant to General Conditions 4 or 6.

Issued by: **Massachusetts Department of Environmental Protection:**

Signature:

James Mahala

James Mahala, Chief
Wetlands & Waterways Program

This Order is issued to the applicant as follows:

☐ by Hand delivery on:

Date

☒ by certified mail on:

JAN 28 2020

Certified Mail #7017 1450 0000 0281 4220

F. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 10 of this form shall be submitted to the Department.

Massachusetts Department of Environmental Protection – Southeast Region
Issuing Authority

To: Massachusetts Department of Environmental Protection – Southeast Region
Issuing Authority

Please be advised that the Order of Conditions for the Project at:

59-119 Baxter Road, Nantucket
Project Address – Street & Town

SE48-3115
DEP File Number

Has been recorded at the Registry of Deeds of:

Nantucket
County

Book

Page

For:
Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

JM/nc

G. Appeal Rights and Time Limits

The applicant, the landowner, any person aggrieved by the Superseding Order, Determination or other Reviewable Decision as defined at 310 CMR 10.04, who previously participated in the proceedings leading to this Reviewable Decision, the conservation commission, or any ten (10) residents of the city or town where the land is located if at least one resident was previously a participant in the permit proceeding, are hereby notified of their right to appeal this Reviewable Decision pursuant to M.G.L. c.30A, § 10, provided the request is made by certified mail or hand delivery to the Department, along with the appropriate filing fee and a MassDEP Fee Transmittal Form within ten (10) business days of the date of issuance of this Superseding Order or Determination, and addressed to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
One Winter Street, 2nd Floor
Boston, MA 02108

A copy of the request (hereinafter also referred to as Appeal Notice) shall at the same time be sent by certified mail or hand delivery to the Conservation Commission, the applicant, the person that requested the Superseding Order or Determination, and the issuing office of the MassDEP at:

MassDEP
20 Riverside Drive
Lakeville, MA 02347

In the event that a ten resident group requested the Superseding Order or Determination, the Appeal Notice shall be served on the designated representative of the ten resident group, whose name and contact information is included in this Reviewable Decision (when relevant).

Contents of Appeal Notice

An Appeal Notice shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6) and 310 CMR 10.05(7)(j), and shall contain the following information:

(a) the MassDEP Wetlands File Number, name of the applicant, landowner if different from applicant, and address of the project;
(b) the complete name, mailing address, email address, and fax and telephone numbers of the party filing the Appeal Notice; if represented by consultant or counsel, the name, fax and telephone numbers, email address, and mailing address of the representative; if a ten residents group, the same information for the group's designated representative;
(c) if the Appeal Notice is filed by a ten (10) resident group, then a demonstration of participation by at least one resident in the previous proceedings that led to this Reviewable Decision;
(d) if the Appeal Notice is filed by an aggrieved person, then a demonstration of participation in the previous proceeding that lead to this Reviewable Decision and sufficient written facts to demonstrate status as a person aggrieved;
(e) the names, telephone and fax numbers, email addresses, and mailing addresses of all other interested parties, if known;

(f) a clear and concise statement of the alleged errors contained in the Department's decision and how each alleged error in inconsistent with 310 CMR 10.00 and does not contribute to the protection of the interests identified in the Wetlands Protection Act, M.G.L. c.131, § 40, including reference to the statutory or regulatory provisions that the party filing the Appeal Notice alleges has been violated by the Department's Decision, and the relief sought, including any specific desired changes to the Department's decision;

(g) a copy of the Department's Reviewable Decision that is being appealed and a copy of the underlying Conservation Commission decision if the Reviewable Decision affirms the Conservation Commission decision;

(h) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant and the conservation commission; and

(i) if asserting a matter that is Major and Complex, as defined at 310 CMR 10.04, a statement requesting that the Presiding Officer make a designation of Major and Complex, with specific reasons supporting the request.

Filing Fee and Address

A copy of the Appeal Notice along with a MassDEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, Massachusetts 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Superseding Order of Conditions for Siasconset Beach Preservation Fund/Town of Nantucket, File No. SE 48-3115

Special Conditions:

1. This Superseding Order of Conditions (SOC) permits installation of an approximately 767 linear foot Geotube extension to the north and a portion of the approximately 1,916 linear foot proposed Geotube extension to the south in order to prevent storm damage to pre-1978 homes, installation of smaller geotextile returns on the ends of the Geotubes to prevent flanking and minimize end effects, planting of vegetation on the face of the coastal bank, and ongoing mitigation (beach nourishment) and monitoring. The proposed southern Geotube extension and smaller geotextile returns shall terminate at the southern boundary of Lot 63. Coir fiber roll returns may be installed on Lot 61 as needed. This SOC denies the proposed installation of Geotubes at the southern end (Lots 61, 59, and 55) of the approximately 1,916 linear foot southern Geotube extension. The Department has determined that the proposed Geotubes on Lots 61, 59 and 55 do not meet the performance standards for Coastal Banks at 310 CMR 10.30 (3). Specifically, the Department has determined that the proposed Geotubes are not required to prevent storm damage at this time, and there may be feasible alternatives to a coastal engineering structure. The SOC also denies the proposed installation of Geotubes along the southern end of the proposed project area where a coastal dune fronts the toe of the coastal bank (Lots 55, 53, 51B, and 51A). The Department has determined that the proposed Geotubes on Lots 55, 53, 51B, and 51A do not meet the performance standards for Coastal Banks at 310 CMR 10.30 (3). Specifically, the Department has determined that the proposed Geotubes are not required to prevent storm damage at this time, and there may be feasible alternatives to a coastal engineering structure.

2. Notice of work commencement shall be given to the Nantucket Conservation Commission (NCC) and the Department at least 48 hours prior to the commencement of work.

3. Prior to installation of the Geotube extensions on lots 63-87 and 105-119 and returns, the proponents shall ascertain the width of the beach seaward of the existing Geotubes to determine whether there is sufficient beach width landward of mean high water (MHW) to conduct activities associated with the installation of the Geotubes and returns in accordance with the proposed construction methodology. In the event the beach is not sufficiently wide to allow Geotube installation in accordance with the proposed construction methodology, the proponents shall submit an alternative construction methodology for the Department's review and approval.

4. Prior to installation of the Geotube extensions on lots 63-87 and 105-119 and returns, the proponents shall mark the MHW line with surveyed stakes, obtain Global Positioning System (GPS) coordinates along the MHW line and shall maintain the stakes throughout the duration of construction. GPS coordinates shall be submitted to the Department and the NCC within 2 weeks of collection.

5. The staked position of the MHW line shall serve as a limit of work throughout the duration of construction. No work is allowed seaward of the MHW line under this SOC.

6. Access to the beach shall be from Hoick's Hollow north of the project area. A gate or similar structure shall be installed to control vehicular access to the beach at the Hoick's Hollow access point.

7. All sand used to fill and cover the Geotubes shall be imported from an off-site source and shall be clean sediment compatible in terms of grain size with the existing beach sediments. The Department reserves the right to request the grain size analysis of sediments used for beach nourishment.

8. As proposed, the smaller geotextile returns shall be installed in a manner to form closure between the existing Geotubes and the adjacent bluff without excavation into the coastal bank. All beach sand excavated to install the returns shall remain on the beach and shall be used to restore the beach following construction.

9. The ongoing beach monitoring/survey program currently conducted by the Woods Hole Group shall continue. The monitoring program shall be conducted on a **quarterly basis for the first 3 years** in order to timely identify beach impacts that may be attributable to the Geotubes and to assess whether the mitigation program is adequate. Beach profiles shall be taken on a quarterly basis along the 24 proposed profile lines. Beach profiles shall be taken from the toe of the coastal bank, coastal dune or Geotube seaward to the –5 foot MLW contour.

Beach profile data and analysis shall be submitted to the Department and the NCC within 30 days of completion of the quarterly survey. Following 3 years of quarterly surveys, the proponents may request the Department to re-assess the need for quarterly beach profiles. Such a request shall be accompanied with a report that provides reasonable justification for a reduced survey schedule. The final decision on any changes to the monitoring program rests with the Department.

10. As proposed, offshore (bathymetric) profiles shall be taken on an annual basis. Offshore profiles shall be taken out to the –25 foot to -35 foot MLW92 contour or 2,000 to 3,000 feet offshore, whichever is less. The bathymetric survey transects shall overlap the beach profiles (no gaps) and the tide gage used during the survey shall be surveyed into the same datum as the beach profiles. Bathymetry profile data and analysis shall be submitted to the Department and NCC within 30 days of completion of the survey.

11. An annual assessment report summarizing the beach and bathymetric profile monitoring program shall be submitted to the Department and the NCC each year. This report shall, at a minimum, provide an analysis of beach changes including volumetric changes between surveyed transects, assess location of the top of coastal bank and estimate bank retreat over the previous 12 months and calculate bank volume loss in the project area and 300 feet to the north and south. In addition, the report shall recommend any necessary changes to the beach nourishment program for the Department's review and approval.

12. Post-Storm monitoring reports shall be submitted following all significant storms. A storm will be considered "significant" if there are sustained winds over 40 mph over at least a 6 hour period according to NOAA's National Climate Data Center, Nantucket Memorial Airport station. The post-storm monitoring report shall include, at a minimum, photo-documentation of the condition of the Geotubes and nourishment sand within the project area, estimate of the volume of sand lost from the sand template, estimate of the beach level in front of the Geotubes to determine if replenishment is needed, estimate of volume of sand (if necessary) and schedule for delivery, identification of the location of any exposed geotextile or of any repair required to the geotextile, and visual observation of the ends of the Geotubes to determine if flanking is occurring. Such reports shall be submitted to the Department and the NCC as soon as possible following all significant storms but no later than 7 days from the end of the storm.

13. Sand mitigation shall be at a rate of 22 cubic yards per linear foot (cy/lf) per year in accordance with the following schedule for the first 3 years:

    a. Provide initial cover of 22 cy/lf during and/or immediately following construction of the Geotube extensions and returns.

    b. Annually in April: Provide additional sand and/or adjust the existing template to obtain a minimum two foot cover over the Geotubes to protect them from UV degradation. The volume of any sand placed in April shall be recorded and counted towards the annual 22 cy/lf requirement.

    c. Annually in September-November: Place an additional volume of sand, to ensure a substantial portion of the sand template volume (10-15 cy/lf) is available at the onset of the winter storm season. Throughout the winter, place additional sand on an as-needed basis, in accordance with the replenishment trigger in the Milone & MacBroom's November 12, 2013 letter (i.e., if half the vertical height of the lowest Geotube is exposed, place a minimum of 2 cy/lf). If the balance of the 22 cy/lf volume is not placed in its entirety before March 1, the balance of the sand will be placed by March 31.

    d. Delivery tickets from sand supplier shall be provided annually to the Department and the NCC to document the total volume of sand provided on a yearly basis.

    e. Following 3 years of mitigation at a rate of 22 cubic yards per linear foot per year, the proponents may request the Department to re-assess the rate of sand mitigation. Such a request shall be accompanied with a report that provides reasonable justification for a modified mitigation rate. The final decision on any changes to the monitoring program rests with the Department.

14. If there is not adequate space to provide the entire mitigation volume within the project area footprint, then any remaining sand shall be placed in a berm at the toe of the coastal bank or dune and landward of MHW within 300 feet of the ends of the Geotubes. Any additional sand placed outside of the project area shall be equally distributed to the areas north and south of the project area.

15. Failure of the Siasconset Beach Preservation Fund (SBPF) to conduct the actions set out in subsections (a) to (e) herein shall constitute a project failure ("failure criteria") if not performed within the stipulated timeframes or within such other reasonable periods of time as determined by the Department in the event of a delay in performance outside the control of SBPF, or if there are unmitigated adverse impacts from the project. The "failure criteria" include:

    a. Failure to provide the sand mitigation as required in Special Conditions #s 7, 13, and 14.

    b. Failure to conduct the shoreline monitoring and post-storm monitoring as required in Special Conditions #s 9 through 12.

    c. Failure to repair and/or replace damaged geotextile tubes in a timely manner. If repair or replacement cannot be accomplished within 30 days from the date of the damage, SBPF shall notify the Department and the NCC before 30 days have elapsed and provide a repair schedule for Department review and approval.

    d. Excessive loss in updrift or downdrift beach cross section that can be attributed to the project. If the quarterly monitoring program identifies excessive loss to the adjacent shoreline (compared to historical data) that may be attributable to the project, then SBPF shall contact the Department and the NCC within 30 days of the completion of the quarterly survey. Upon notice, the Department shall commence an information gathering and consultation process to evaluate whether the shoreline loss is a result of the project. Following the conclusion of the evaluation the Department shall determine an appropriate course of action to address the beach loss associated with the project which may include, but is not limited to, changes to the placement of the sand template, an increase in the volume of sand mitigation, or project removal if impacts cannot be effectively mitigated. SBPF shall implement the Department's required mitigation within 30 days of receipt of written notification from the Department.

    e. Failure to maintain adequate beach width in front of the Geotubes. If the beach in the project area erodes so that the position of MHW migrates landward to the seaward edge of the second tier of geotextile tubes for any two consecutive quarterly surveys, then within 30 days of completion of the second quarterly survey SBPF shall contact the Department and the NCC. Upon notice, the Department shall commence an information gathering and consultation process. Following the conclusion of the evaluation, the Department shall determine an appropriate course of action which may include, but is not limited to, changes to the placement of the sand template, an increase in the volume of sand mitigation, or Geotube removal if impacts cannot be effectively mitigated. SBPF shall implement the Department's required mitigation within 30 days of receipt of written notification from the Department.

16. In the event certain failure criteria have been met and the Department orders Geotube removal, then the geotextile fabric shall be cut, removed and properly disposed of. Following removal of the geotextile fabric, sand from the Geotubes shall be spread along the beach landward of MHW. SBPF and the Town shall maintain the escrow fund in place as of the date of this SOC to ensure the availability of funds to pay for the removal of the Geotubes. Lack of adequate funds in the escrow account shall not negate SBPF's requirement for Geotube removal.

17. The SBPF shall be responsible for the retrieval and proper disposal of all geotextile products associated with this project in the event wave action and erosion destroys or otherwise causes damage to the Geotube system.

18. As proposed, exposed areas on the face of the coastal bank, other than the upper 5-7 feet between lots 109 and 115 Baxter Road, may be stabilized using biodegradable erosion control blankets planted with beach grass and/or

other indigenous coastal vegetation. The erosion control blankets and plantings shall be installed with hand tools with workers repelling down the bank face.

19. All construction refuse shall be removed from the site and disposed of in compliance with all local, State, and Federal laws and regulations.

20. Upon completion of the proposed installation of the North and South Geotube extensions and returns, a partial Certificate of Compliance shall be requested in accordance with General Condition No. 11, and under the provisions of 310 CMR 10.05 (9)(d). A statement from a Professional Engineer or a Professional Land Surveyor registered in the Commonwealth of Massachusetts certifying compliance with the plans and conditions of this Order shall accompany the request for a partial Certificate of Compliance.

21. A portion of the proposed project is located within mapped *Priority and Estimated Habitat* of state-protected rare species by the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife (Division). As such, the proponent must adhere to the following conditions:

    a. All work, including all access locations (e.g. Hoicks Hollow), located within Priority Habitat is prohibited during the period **April 1 – August 31**, unless a monitoring and protection plan for state-listed species has been approved in writing by the Division.
    b. To reduce end scour and impacts to the Coastal Dune located within Priority Habitat, prior to the start of work, a nourishment plan that enhances or maintains Coastal Dune shall be submitted to the Division for review and written approval.
    c. The Applicant has the responsibility of protecting breeding Piping Plovers and state-listed species of terns that may be on this section of beach. Therefore, the Applicant must allow regular monitoring for the presence of Piping Plovers and terns by a qualified shorebird monitor, as determined by the Division, during the period April 1 – August 31 and shall allow any nests, scrapes, or unfledged chicks to be protected with symbolic fencing (warning signs and twine fencing).
    d. Within sixty (60) days of completion of work, the Applicant shall submit to the Division as-built site plans and a brief written report including photographs showing final constructed conditions with particular emphasis on demonstrating compliance with the conditions herein.
    e. The Division authorization is valid for 5 years from the date of issuance and limited to the project described herein.
    f. Upon filing for renewal, extension, or amendment of the Superseding Order of Condition, the applicant shall contact the Division for written response regarding impacts to Resource Area habitat of state-listed wildlife.

22. This SOC does not relieve the applicant/owner from complying with the Town of Nantucket Wetland Bylaw.

Record & Assessed Owners: 59-119 Baxter Road - 2018

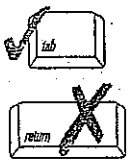
Property Address	Map & Parcel	Record Title Holder	Assessed Owner	Recording information
59 Baxter Road	49-20	Kevin F. Dale, Trustee of 59 Canopache Nominee Trust	Kevin F. Dale, Trustee of 59 Canopache Nominee Trust	C19072
61 Baxter Road	49-21	Ann R. Healey, Trustee of the Mayflower QPRT	Ann R. Healey, Trustee of the Mayflower QPRT	1325/277
63 Baxter Road	49-22	Elizabeth Singer, Trustee of the 64 Baxter Road Realty Trust	Elizabeth Singer, Trustee of the 64 Baxter Road Realty Trust	C19844
65 Baxter Road	49-23	Thomas Tuttle & Sharmila Tuttle	Thomas Tuttle & Sharmila Tuttle	1200/102
67 Baxter Road	49-24	Morning Light LLC, Margaret Hearst manager	Morning Light LLC, Margaret Hearst manager	845/269
69 Baxter Road	49-25	Richard & Marianne L. Moscicki	Richard & Marianne L. Moscicki	1294/117
71 Baxter Road	49-26.1	John C. Merson and Carol Bunevich	John C. Merson and Carol Bunevich	C21251
73 Baxter Road	49-27	Christian M. Darby	Christian M. Darby	1315/310
75 Baxter Road	49-30	Sankaty Bluff Group, LLC, John E. Osborn and Deborah P. Osborn manager	Sankaty Bluff Group, LLC, John E. Osborn and Deborah P. Osborn manager	1152/78
77 Baxter Road	49-31	Joshua Posner and Eileen Rudden	Joshua C. Posner and Eileen M. Rudden	C17538
79 Baxter Road	49-32	Helmut F. Weymar & Caroline S. Weymar	F. Helmut Weymar & Caroline S. Weymar	C12804
81 Baxter Road	49-33	William D. & Deborah Futter Cohan	William D. & Deborah Futter Cohan	C23689
83 Baxter Road	49-34	Marie Dostalier and Richard Touchette	Marie Dostalier and Richard Touchette	C23698
85 Baxter Road	49-35	Siasconset Preservation Fund, Inc. - Joshua Posner President	Siasconset Preservation Fund, Inc. - Joshua Posner President	C26035
87 Baxter Road	49-8	Samuel Furrow & Ann Furrow	Samuel Furrow & Ann Furrow	839/295
91 Baxter Road	48-22	Daniel L. Korengold, Trustee of D&M Baxter Road Nominee Trust	Daniel L. Korengold, Trustee of D&M Baxter Road Nominee Trust	1352/45
93 Baxter Road	48-21	Steven T. & Erin P. Freeman	Steven T. & Erin P. Freeman	1069/97
97 Baxter Road	48-19	Lawrence C. & Margaret McQuade	Lawrence C. & Margaret McQuade	C17087
99 Baxter Road	48-18	Ann B. Furrow	Ann B. Furrow	C20681
101 Baxter Road	48-17	101 Baxter Road LLC, James E. Walker and Deborah C. Walker managers	101 Baxter Road LLC, James E. Walker and Deborah C. Walker managers	01427/0341
105 Baxter Road	48-15	Marilee B. Matteson, as Trustee of Marilee Brill Matteson Nominee Trust	Marilee B. Matteson, as Trustee of Marilee Brill Matteson Nominee Trust	C25689
107 Baxter Road	48-14.1	Whitney A. Gifford, Trustee of S.C. Nominee Trust	Hannah J. Gretz, Trustee of S.G. Nominee Trust	01285/0217
107A Baxter Road	48-14	Whitney A. Gifford, Trustee of S.G. Nominee Trust	Whitney A. Gifford, Trustee of S.G. Nominee Trust	647/191
109 Baxter Road	48-12	Justine Mascioli Kenney, Trustee of Frederick P. Mascioli Living Trust	Justine Mascioli Kenney, Trustee of Frederick P. Mascioli Living Trust	C26159
113 Baxter Road	48-11	Loretta Yoder and Kyle L. Latshaw	Loretta Yoder and Kyle L. Latshaw	925/147
115 Baxter Rd	48-10	115 Baxter LLC, John Khawam manager	115 Baxter LLC, John Khawam manager	1513/335
117 Baxter Rd	48-9	Stephen B. Cohen	Stephen B. Cohen	575/163
119 Baxter Rd	48-7	Sconset Trust, Inc. - Elliot Gewirtz President	Sconset Trust, Inc. - Elliot Gewirtz President	C18718
Sconset Bluff	49-9	Town of Nantucket	Town of Nantucket	102/119
Sconset Bluff	48-6	Town of Nantucket	Town of Nantucket	185/52
Sconset Bluff	48-8	Town of Nantucket	Town of Nantucket	C1702
Sconset Bluff	48-5	Sconset Trust, Inc. - Elliot Gewirtz President	Sconset Trust, Inc. - Elliot Gewirtz President	

Massachusetts Department of Environmental Protection

Adjudicatory Hearing Fee Transmittal Form

IMPORTANT! This form is intended for fee transmittal only. The contents of a request for an adjudicatory appeal (Notice of Claim) are established at 310 CMR 1.01(6) and the substantive statutes and regulations governing the Department's action.

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Person/Party Making Request

1. Name and address of person or party making request:

Name - If appropriate, name group representative

Street Address

City | State | Zip Code

2. Project Information:

Street Address

City | State | Zip Code

DEP File or ID Number | $ Amount of filing fee attached

Email Address

B. Applicant (if applicable)

1. Name and address of applicant:

Name - If appropriate, name group representative

Street Address

City | State | Zip Code

Email Address

C. Instructions

1. Send this form and check or money order of $100.00 payable to the Commonwealth of Massachusetts to the MassDEP Lockbox at:

   Department of Environmental Protection
   P.O. Box 4062
   Boston, MA 02211

2. Send a **copy** of this form and a **copy** of the check or money order with the Request for Adjudicatory Appeal (Notice of Claim) to:

   Case Administrator
   Office of Appeals and Dispute Resolution
   One Winter Street
   Boston, MA 02108

KP | LAW
The Leader in Public Sector Law

101 Arch Street, Boston, MA 02110
Tel: 617.556.0007 | Fax: 617.654.1735
www.k-plaw.com

February 11, 2020

George X. Pucci
gpucci@k-plaw.com
(617) 654-1718

BY HAND

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
One Winter Street, 2d Floor
Boston, MA 02108

Re: Nantucket – Wetlands
DEP File No. SE 48-3115
59-119 Baxter Road

Dear Sir/Madam:

Enclosed for filing is an Appeal Notice of the Superseding Order of Conditions for the above-referenced project. Please date stamp your receipt on the copy of this cover letter and return it to the courier.

Thank you for your attention to this matter.

Very truly yours,

George X. Pucci

GXP/man
Enc.
cc: Town Manager
Conservation Commission
Siasconset Beach Preservation Fund c/o Glenn A. Wood, Esq. (by certified mail)
MassDEP, Lakeville (by certified mail)

711034/19705/0152

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

THE OFFICE OF APPEALS AND DISPUTE RESOLUTION

Re: NANTUCKET WETLANDS DEP File No. SE48-3115 59-119 Baxter Road Applicant: Sconset Beach Preservation Fund Landowner: Multiple, see Record & Assessed Owners, 59-119 Baxter Road attached to enclosed decision on appeal	APPEAL NOTICE OF NANTUCKET CONSERVATION COMMISSION

Appellant, Nantucket Conservation Commission ("Commission"), hereby appeals the Superseding Order of Conditions for the above-referenced project, issued by the Massachusetts Department of Environmental Protection ("Department") by certified mail on January 28, 2020, pursuant to G.L. c.30A, §10. A copy of the decision being appealed is enclosed herewith. In support of this appeal, the Commission provides the following clear and concise statement of errors in the Department's decision as required under 810 CMR 10.05(7)(j)2.v.

Applicant clarification:

First, it should be noted that the project proposal is not jointly sponsored between the applicant, Sconset Beach Preservation Fund ("SBPF") and the Town of Nantucket. Rather, the Town through its Select Board ("Board") authorized SBPF to file the application with the Commission as a landowner in the project area. The assent filed by the Town of Nantucket on August 7, 2018 includes the following statement clarifying its participation in the application:

> "This assent authorizes SBPF to file the NOI but does not waive or grant any other rights or assume any liabilities or obligations thereto. No work is authorized. However, permission is granted for the reasonable entry only to my

land for inspection, survey and other information gathering purposes related to the NOI."

However, the Board has advised SBPF that it intends to defer to the Commission as the local regulatory authority with jurisdiction over the substantive environmental performance standards applicable to the project. In the event the Commission's Appeal is unsuccessful, it is by no means clear that the Board will be supportive of the project or would be willing to sponsor an article for Town Meeting approval authorizing the use of Town owned land where the project would be constructed, thus possibly rendering this entire matter moot.

Pre-1978 Qualification:

In the Superseding Order on appeal, the Defendant states:

> The Wetland Regulations at 310 CMR 10.30(3) provides, in part, that a coastal engineering structure "shall be permitted" when required to protect buildings constructed prior to 1978 from storm damage. The expanded project would protect 13 pre-1978 homes in the southern extension and 3 pre-1978 homes in the northern extension. All of the homes on the ocean-side of Baxter Road in the project area are pre-1978 buildings.

However, evidence presented during the public hearing on SBPF's application shows that the houses at 69 and 81 Baxter Road were constructed in 1997 and 1994 respectively and therefore do not qualify for a Coastal Engineering Structure. This would be in conflict with the statement that all of the homes on the ocean-side of Baxter Road in the project area are pre-1978 buildings.

Later in the Superseding Order in justifying the denial of the project on lots 55, 53, 51B and 51A the Department determined:

> "that there may be feasible alternatives to a coastal engineering structure, such as building relocation to the landward side of Baxter Road."

The evidence during the public hearing shows that this same finding should have been rendered for additional property in the proposed project area. The existing property at 77 Baxter Road is held in common ownership with a currently vacant lot, 80 Baxter Road, which is the lot directly on the landward side of Baxter Road. Therefore, the Commission found that the structure at 77 Baxter Road should not qualify for a Coastal Engineering Structure. The Commission found, and the Department should also have found that relocation of this structure would be a feasible alternative to the Coastal Engineering Structure.

Gap lots:

The Superseding Order states:

> The project area also includes 2 (vacant) gap lots at 85 and 107/107A Baxter Road. In the Department's judgment, the applicant has demonstrated the need to provide a contiguous Geotube system across the gap lots that can effectively protect pre- 1978 homes in the area, including pre-1978 homes on the landward side of Baxter Road."

The Commission contends that this gap analysis is not accurate in that 69, 77 and 81 Baxter Road should be considered to be gap lots at a minimum as those lots do not have pre-1978 structures without feasible alternatives to qualify for the use of a Coastal Engineering Structure. It is the Commission's position that permitting a four tiered Geotube in front of so-called gap lots and non-qualifying structures is inconsistent with the Department's reasoning provided in denying the Geotubes in front of 55, 53, 51B and 51A, as follows:

> In the Department's opinion, the proposed Geotubes on Lots 55, 53, 51B and 51A are not required to prevent storm damage to homes at this time. As a result, the Department has determined that the proposed Geotubes in this area do not meet the performance standards for Coastal Banks at 310 CMR 10.30(3). In addition, the Department has determined that there may be feasible alternatives to a coastal engineering structure, such as building relocation to the landward side of Baxter Road.
>
> Please be advised that any future NOI must demonstrate that there are no feasible alternatives to the Geotubes such as relocation of threatened buildings, that the buildings are at risk of storm damage at the time of the application and that the

> Geotubes or an alternative coastal structure are necessary to prevent storm damage to pre-1978 buildings.

It is the Commission's position that as the buildings on the landward side of Baxter Road are not within the jurisdiction of the Wetlands Protection Act, they are clearly not threatened by erosion at this time. The Commission notes that the current Superseding Order is in direct conflict with the previously issued Superseding Order for the existing project (DEP File Number SE48-2610), which reads as follows:

> The enclosed SOC (SE48-2610) denies the installation of the fourth tier of Geotubes along lots 87, 101 and 105 because the Geotubes in these areas don't serve to directly protect pre-1978 buildings. However, five pre-1978 buildings within the project area are currently located on the landward side of Baxter Road on lots 92, 96, 100, 104 and 106. These dwellings are located sufficiently back from the top of the coastal bank such that they do not appear to be presently threatened by erosion. The enclosed SOC provides an opportunity for the landward pre-1978 owners (on lots 92, 96, 100, 104 and 106) to file a new Notice of Intent (NOI) to maintain the Geotubes in that stretch of the project area prior to the 6 year expiration date of the SOC. Any such future NOI must demonstrate that there are no feasible alternatives to the Geotubes such as relocation of threatened buildings, that the buildings are threatened at the time of the application and that the Geotubes or an alternative coastal structure are necessary to prevent storm damage to such pre-1978 buildings.

Imminent danger:

On the issue of imminent danger, the Department notes:

> The enclosed SOC denies the proposed installation of Geotubes at the southern end (Lots 61, 59, and 55) of the approximately 1,916 linear foot southern Geotube extension. The coastal bank is more stable in the area south of lot 63 with extensive vegetation on the face of the coastal bank compared to areas to the north. In addition, the homes on Lots 61 and 59 do not meet the applicant's proposed "imminent" danger criteria that dwellings within 40 feet of the top of the coastal bank need immediate protection from storm damage as discussed in the Notice of Project Change filed with MEPA.

The Superseding Order is unclear in how a distance of 40 feet from the top of the bank was determined to be the distance accepted for imminent danger. Imminent danger is not clearly defined in the existing state regulations (310 CMR 10.00) and acceptance of a distance not

clearly defined by regulations appears to be arbitrary. In a comparable case, the Dukes County Superior Court upheld a denial of a Coastal Engineering Structure, with Justice Moriarty noting that imminent means "liable to happen soon." Using publicly available data from the Massachusetts Ocean Resource Information System (MORIS) the published short term shoreline change rate is -6.2 feet/year and the long term shoreline change rate is -0.85 feet/year. Given these rates and understanding the site specific information, 40 feet is not an appropriate number for determining imminent danger. Using the public rates it would be six years using the short term rate to approach 40 feet. Even if that rate was doubled it would be three years to approach the 40 feet. The Commission contends that a number closer to 10-15 feet would be more appropriate for this determination. Given this necessary change in criteria a number of the homes on the ocean side of Baxter Road would need to be reviewed for being within imminent danger. If they are not within imminent danger then they would not require immediate protection.

Nourishment:

The Commission has a number of concerns related to the approved mitigation and monitoring plan within the Superseding Order. Given the conditions and history of the existing project, the mitigation and monitoring conditions are inadequate to protect the interests in the Wetlands Protection Act. The Superseding Order deems the existing nourishment plan a success in maintaining a walkable beach, and continues with the following:

> The Department is aware of recent enforcement action taken by the Nantucket Conservation Commission regarding the use of non-beach compatible nourishment material and the failure to submit beach monitoring reports. The Department supports the Commission's enforcement actions. Failure to provide clean, compatible sediment as mitigation and failure to submit timely quarterly monitoring reports could result in further enforcement action and constitute project failure in accordance with criteria in the enclosed SOC.

The Commission contends that it is not appropriate to find portions of the nourishment program a success given that an entire monitoring period was missed and that clearly unsuitable material has been used on the existing project. The Commission also contends that Special Conditions 7, 13 and 14 given the history of non-compliance on the existing project to not adequately protect the interests protected by the Act. The Superseding Order requires that should "certain failure criteria" be met the Department is to order further action but does not define these "certain" criteria. The existing project has met two of these criteria under the existing Order of Conditions SE48-2824. The Commission contends that a more well defined and supervised mitigation and monitoring plan should be required to ensure that existing failures are not able to be repeated and if they are, clearly defined actions are in place. It is not sensible to allow a project with met failure criteria to be expanded with the same or less restrictive conditions going forward.

Comments on Specific Conditions:

Special Condition 7:

> All sand used to fill and cover the Geotubes shall be imported from an off-site source and shall be clean sediment compatible in terms of grain size with the existing beach sediments. The Department reserves the right to request the grain size analysis of sediments used for beach nourishment.

The Commission contends that given the current enforcement action related to the existing project, this condition does not adequately protect the interests identified in the Act and accompanying regulations. The reliance solely on grain size does not properly characterize the natural material contributing to the resource areas and littoral system. Given the size and scope of the project, control samples of the beach and bank must be taken from the entire project area and the nourishment material should reflect the parent sediment sources. This should include comparable gravel and aggregate composition or limiting the fines to better reflect existing

conditions. Given the size of the project, a consideration to a color matching requirement should also be contemplated to help mitigate the potential visual impact of a project of this scope.

Special Condition 8:

> As proposed, the smaller geotextile returns shall be installed in a manner to form closure between the existing Geotubes and the adjacent bluff without excavation into the coastal bank. All beach sand excavated to install the returns shall remain on the beach and shall be used to restore the beach following construction.

The Commission contends that any beach sand excavated for this project in its entirety should be held on-site and used to maintain or restore the beach. This requirement should not be limited to the area of the returns.

Special Condition 9:

> The ongoing beach monitoring/survey program currently conducted by the Woods Hole Group shall continue. The monitoring program shall be conducted on a **quarterly basis for the first 3 years** in order to timely identify beach impacts that may be attributable to the Geotubes and to assess whether the mitigation program is adequate. Beach profiles shall be taken on a quarterly basis along the 24 proposed profile lines. Beach profiles shall be taken from the toe of the coastal bank, coastal dune or Geotube seaward to the -5 foot MLW contour. Beach profile data and analysis shall be submitted to the Department and the NCC within 30 days of completion of the quarterly survey. Following 3 years of quarterly surveys, the proponents may request the Department to re- assess the need for quarterly beach profiles. Such a request shall be accompanied with a report that provides reasonable justification for a reduced survey schedule. The final decision on any changes to the monitoring program rests with the Department.

Given the existing enforcement on the existing project where this specific reporting was missed, the Department should have required a yearly contract to be filed authorizing the monitoring to go forward and funded by the applicant. This project is dependent upon providing this reporting to ensure that no impacts to resource areas are occurring and that updrift and downdrift impacts are not occurring as well. Given the history of missed reporting, a greater level of assurance that monitoring will occur and be reported on time must be required.

Special Condition 11:

An annual assessment report summarizing the beach and bathymetric profile monitoring program shall be submitted to the Department and the NCC each year. This report shall, at a minimum, provide an analysis of beach changes including volumetric changes between surveyed transects, assess location of the top of coastal bank and estimate bank retreat over the previous 12 months and calculate bank volume loss in the project area and 300 feet to the north and south. In addition, the report shall recommend any necessary changes to the beach nourishment program for the Department's review and approval.

This condition should have specified a specific time when the report is due and reviewed each year. Given that the nourishment cycle begins in April the review of the project should be required to occur prior to that date. Failure to provide the annual report prior to that date should be cause for a project failure and should be include in Special Condition 15b.

Special Condition 13*:*

Sand mitigation shall be at a rate of 22 cubic yards per linear foot (cy/lf) per year in accordance with the following schedule for the first 3 years:

a. Provide initial cover of 22 cy/lf during and/or immediately following construction of the Geotube extensions and returns.

b. Annually in April: Provide additional sand and/or adjust the existing template to obtain a minimum two foot cover over the Geotubes to protect them from UV degradation. The volume of any sand placed in April shall be recorded and counted towards the annual 22 cy/lf requirement.

c. Annually in September-November: Place an additional volume of sand, to ensure a substantial portion of the sand template volume (10-15 cy/lf) is available at the onset of the winter storm season. Throughout the winter, place additional sand on an as-needed basis, in accordance with the replenishment trigger in the Milone & MacBroom's November 12, 2013 letter (i.e., if half the vertical height of the lowest Geotube is exposed, place a minimum of 2 cy/lf). If the balance of the 22 cy/lf volume is not placed in its entirety before March 1, the balance of the sand will be placed by March 31.

d. Delivery tickets from sand supplier shall be provided annually to the Department and the NCC to document the total volume of sand provided on a yearly basis.

e. Following 3 years of mitigation at a rate of 22 cubic yards per linear foot per year, the proponents may request the Department to re-assess the rate of sand mitigation. Such a request shall be accompanied with a report that provides reasonable justification for a modified mitigation rate. The final decision on any

changes to the monitoring program rests with the Department.

The Commission restates the comments related to Special Condition 7. In addition, the Commission contends that the specific source and specific volume should be provided with the delivery tickets, and that work logs be provided to document work being conducted on the site. Successful implementation of the nourishment program is critical to protect the interests of the Act. The existing project has not been able to meet these requirements as unclean fill was recently used as part of the project. Expansion of the project and sand availability will be a challenge going forward and should be strictly conditioned to ensure compliance with the requirements of the Order.

Special Condition 14:

> If there is not adequate space to provide the entire mitigation volume within the project area footprint, then any remaining sand shall be placed in a berm at the toe of the coastal bank or dune and landward of MHW within 300 feet of the ends of the Geotubes. Any additional sand placed outside of the project area shall be equally distributed to the areas north and south of the project area.

The Commission contends that this condition could potentially provide for a tacit expansion of the project. There is not enough clarity to what "adequate space" is given the size and scope of the project. Without clear guidelines to what adequate space is this condition does not allow for clear enforcement or monitoring. The Commission agrees that the whole nourishment volume should be available to enter the littoral system. Proper monitoring and construction protocols are critical to this interest.

Special Condition 15:

> Failure of the Siasconset Beach Preservation Fund (SBPF) to conduct the actions set out in subsections (a) to (e) herein shall constitute a project failure ("failure criteria") if not performed within the stipulated timeframes or within such other reasonable periods of time as determined by the Department in the event of a delay in performance outside the control of SBPF, or if there are unmitigated adverse impacts from the project. The "failure criteria" include:

a. Failure to provide the sand mitigation as required in Special Conditions #s 7, 13, and 14.

b. Failure to conduct the shoreline monitoring and post-storm monitoring as required in Special Conditions #s 9 through 12.

c. Failure to repair and/or replace damaged geotextile tubes in a timely manner. If repair or replacement cannot be accomplished within 30 days from the date of the damage, SBPF shall notify the Department and the NCC before 30 days have elapsed and provide a repair schedule for Department review and approval.

d. Excessive loss in updrift or downdrift beach cross section that can be attributed to the project. If the quarterly monitoring program identifies excessive loss to the adjacent shoreline (compared to historical data) that may be attributable to the project, then SBPF shall contact the Department and the NCC within 30 days of the completion of the quarterly survey. Upon notice, the Department shall commence an information gathering and consultation process to evaluate whether the shoreline loss is a result of the project. Following the conclusion of the evaluation the Department shall determine an appropriate course of action to address the beach loss associated with the project which may include, but is not limited to, changes to the placement of the sand template, an increase in the volume of sand mitigation, or project removal if impacts cannot be effectively mitigated. SBPF shall implement the Department's required mitigation within 30 days of receipt of written notification from the Department.

e. Failure to maintain adequate beach width in front of the Geotubes. If the beach in the project area erodes so that the position of MHW migrates landward to the seaward edge of the second tier of geotextile tubes for any two consecutive quarterly surveys, then within 30 days of completion of the second quarterly survey SBPF shall contact the Department and the NCC. Upon notice, the Department shall commence an information gathering and consultation process. Following the conclusion of the evaluation, the Department shall determine an appropriate course of action which may include, but is not limited to, changes to the placement of the sand template, an increase in the volume of sand mitigation, or Geotube removal if impacts cannot be effectively mitigated. SBPF shall implement the Department's required mitigation within 30 days of receipt of written notification from the Department.

Special Condition 16:

In the event certain failure criteria have been met and the Department orders Geotube removal, then the geotextile fabric shall be cut, removed and properly disposed of. Following removal of the geotextile fabric, sand from the Geotubes shall be spread

along the beach landward of MHW. SBPF and the Town shall maintain the escrow fund in place as of the date of this SOC to ensure the availability of funds to pay for the removal of the Geotubes. Lack of adequate funds in the escrow account shall not negate SBPF's requirement for Geotube removal.

The Commission contends that the failure criteria must be more clearly and well defined, especially since this applicant has already met one of these failure criteria on the existing project. Given the placement of improper nourishment material on the existing project, improper material should be clearly included within the failure criteria. The Commission also contends that the escrow fund should have a mechanism to adjust the amount on a yearly basis to account for changes in cost for potential removal.

Given the above factual issues and existing conditions the Commission respectfully requests that the Superseding Order be reversed and the original decision restored. The project as permitted and conditioned through the Superseding Order does not adequately protect the interests identified in the Massachusetts Wetlands Protection Act.

NANTUCKET CONSERVATION COMMISSION
By its attorneys,

George X. Pucci (BBO# 555346)
KP Law, P.C.
Town Counsel
101 Arch Street, 12th Floor
Boston, MA 02110-1109
(617) 556-0007
gpucci@k-plaw.com

CERTIFICATION OF SERVICE

Counsel for the Commission hereby certifies that a copy of the Commission's Appeal Notice has been sent by certified mail to the applicant and to the issuing office, MassDEP, 20 Riverside Drive, Lakeville, MA 02347. A copy has also been sent by regular mail to the Commonwealth of Massachusetts Department of Environmental Protection, Commonwealth Master Lockbox, P. O. Box 4062, Boston, MA 02210, but that no filing fee is required as the Commission is a municipal agency.

Signed this 11th day of February, 2020.

George X. Pucci, Esq.

711023/19705/0152

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

JAN 28 2020

Siasconset Beach Preservation Fund
c/o Glenn A. Wood, Esq.
Rubin & Rudman LLP
53 State Street
Boston, Massachusetts 02109

RE: NANTUCKET—Wetlands
DEP File No. SE 48-3115
Superseding Order of Conditions
59-119 Baxter Road

Dear Attorney Wood:

Following an in-depth review of the above-referenced file and in accordance with Massachusetts General Laws, Chapter 131, Section 40, the Department of Environmental Protection has issued the enclosed Superseding Order of Conditions (SOC). This Order approves the proposed northern extension to the existing Geotube and a portion of the southern extension subject to certain conditions. The Department has determined that the project area is significant to the statutory interests of flood control, storm damage prevention and the protection of wildlife habitat.

The Notice of Intent (NOI) was jointly filed by the Siasconset Beach Preservation Fund (SBPF) and the Town of Nantucket. The Town owns the beach in the project area. The project proposes an approximately 767 linear foot Geotube extension to the north and an approximately 1,916 linear foot Geotube extension to the south, smaller geotextile returns, planting of vegetation on the face of the coastal bank, and ongoing mitigation (beach nourishment) and monitoring of project performance. As shown on the referenced plans, the proposed design incorporates 4 tiers of Geotubes. The project area currently contains three to four tiers of Geotubes with a total length of approximately 947 feet. The Department has determined that the coastal bank (Sconset Bluff) acts both as a sediment source and as a vertical buffer to elevated storm waters.

The Wetland Regulations at 310 CMR 10.30(3) provides, in part, that a coastal engineering structure "shall be permitted" when required to protect buildings constructed prior to 1978 from storm damage. The expanded project would protect 13 pre-1978 homes in the southern extension and 3 pre-1978 homes in the northern extension. All of the homes on the ocean-side of Baxter Road in the project area are pre-1978 buildings. The project area also includes 2 (vacant) gap lots at 85 and 107/107A Baxter Road. In the Department's judgment, the applicant has demonstrated the need to provide a contiguous Geotube system across the gap lots that can effectively protect pre-1978 homes in the area, including pre-1978 homes on the landward side of Baxter Road. As a

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

result, the Department has determined that the proposed Geotubes between Lots 115 and 63 meets the above-noted performance standard for Coastal Banks.

The enclosed SOC denies the proposed installation of Geotubes at the southern end (Lots 61, 59, and 55) of the approximately 1,916 linear foot southern Geotube extension. The coastal bank is more stable in the area south of lot 63 with extensive vegetation on the face of the coastal bank compared to areas to the north. In addition, the homes on Lots 61 and 59 do not meet the applicant's proposed "imminent" danger criteria that dwellings within 40 feet of the top of the coastal bank need immediate protection from storm damage as discussed in the Notice of Project Change filed with MEPA. In fact, the homes on Lots 61 and 59 are 68 and 65 feet back from the top of the coastal bank, respectively. Further, it is not clear that the homes on Lots 61, 59, and 55 couldn't be relocated to the landward side of Baxter Road and away from the coastal bank. As a result, the Department has determined that the proposed Geotubes on Lots 61, 59 and 55 do not meet the performance standards for Coastal Banks at 310 CMR 10.30 (3). Specifically, the Department has determined that the proposed Geotubes are not required to prevent storm damage at this time and there may be feasible alternatives to a coastal engineering structure. In the case of Lots 61 and 59, relocation of homes to the landward side of Baxter Road may be a feasible alternative to a coastal engineering structure.

The enclosed SOC also denies the proposed installation of Geotubes along the southern end of the proposed project area where a coastal dune fronts the toe of the coastal bank. In the area of Lots 55, 53, 51B and 51A, the coastal dune serves to protect the toe of the coastal bank from erosion, resulting in a dense vegetative cover on the face of the coastal bank. The applicant proposed the installation of Geotubes if and when the coastal dune erodes away and exposes the coastal bank to erosion. In the Department's opinion, the proposed Geotubes on Lots 55, 53, 51B and 51A are not required to prevent storm damage to homes at this time. As a result, the Department has determined that the proposed Geotubes in this area do not meet the performance standards for Coastal Banks at 310 CMR 10.30(3). In addition, the Department has determined that there may be feasible alternatives to a coastal engineering structure, such as building relocation to the landward side of Baxter Road.

Please be advised that any future NOI must demonstrate that there are no feasible alternatives to the Geotubes such as relocation of threatened buildings, that the buildings are at risk of storm damage at the time of the application and that the Geotubes or an alternative coastal structure are necessary to prevent storm damage to pre-1978 buildings.

The MEPA Certificate (EEA#15240) issued on September 20, 2019 by the Secretary of Energy and Environmental Affairs, directed the Department to address concerns with proposed changes to the applicant's mitigation plan and monitoring frequency. The applicant's revised mitigation plan is an adaptive sand mitigation plan that would change the fixed rate of 22 cubic yard per linear foot a year to a flexible rate of 8.8 cy/lf a year or a volume to fill a 22 cy/lf template, whichever is greater. Due to the apparent success of the current mitigation plan in maintaining a walkable beach seaward of the existing Geotubes and the substantial increase in project length, the Department's SOC will require the current mitigation volume of 22 cy/lf a year to remain for the expanded project. In addition, the applicant's revised monitoring plan would change the shoreline change analysis (beach profile) to semi-annual from the current quarterly requirement. Although the Department's Guide to Best Management Practices for

Beach Nourishment Projects recommends semi-annual monitoring, the Department believes that due to the substantial increase in project length and unique circumstances of the project, the current monitoring plan of quarterly shoreline change analysis will remain for the expanded project. Following 3 years of implementing the required mitigation and monitoring plans, the applicants may request the Department to re-assess these plans in accordance with the enclosed SOC.

The Department is aware of recent enforcement action taken by the Nantucket Conservation Commission regarding the use of non-beach compatible nourishment material and the failure to submit beach monitoring reports. The Department supports the Commission's enforcement actions. Failure to provide clean, compatible sediment as mitigation and failure to submit timely quarterly monitoring reports could result in further enforcement action and constitute project failure in accordance with criteria in the enclosed SOC.

In the opinion of the Department the reasons given here are sufficient to justify this SOC. However, the Department reserves the right, should there be further proceedings in this matter, to raise additional issues and present further evidence as may be appropriate.

If you have any questions concerning this matter please contact Nate Corcoran at (508) 946-2723.

Very truly yours,

James Mahala

James Mahala, Chief
Wetlands and Waterways Program

JM/nc
Enclosure
CERTIFIED MAIL # 7017 1450 0000 0281 4220

cc: Nantucket Conservation Commission

Nantucket Board of Selectmen

WPA Form 5 – Superseding Order of Conditions
Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #

SE 48-3115

A. General Information

1. From: **Massachusetts Department of Environmental Protection**
   Issuing Authority
2. This issuance is for (check one):
   a. ☒ Superseding Order of Conditions
   b. ☐ Amended Superseding Order of Conditions
3. To: Applicant:

Josh	Posner	
a. First Name	b. Last Name	
Siasconset Beach Preservation Fund (SBPF)		
c. Organization		
P.O. Box 2279		
d. Mailing Address Line 1		
Nantucket	MA	02584
e. City/Town	f. State	g. Zip Code

4. Property Owner (if different from applicant):

a. First Name	b. Last Name	
See Attached List		
c. Organization		
d. Mailing Address Line 1		
e. City/Town	f. State	g. Zip Code

5. Project Location:

59-119 Baxter Road	Nantucket	
a. Street Address	b. City/Town	
c. Assessors Map/Plat Number	d. Parcel/Lot Number	
Latitude and Longitude, if known:	41°16'36.748"N	69°57'40.559"W
	e. Latitude	f. Longitude

A. General Information (cont'd)

6. Property recorded at the Registry of Deeds (attach additional information if more than one parcel):

Nantucket
a. County

See attached list
b. Certificate (if registered land)

c. Book

d. Page

7. Dates: 01/05/2018 a. Date NOI Filed; 8/29/2019 b. Date of Site Visit; 6/20/2019 c. Date of Issuance of Local Order

8. Final Approved Plans and Other Documents (attach additional plans or document references):

Expanded Baxter Road and Sconset Bluff Storm Damage Prevention Project Permit Drawings
a. Plan Title

Baird W.F. Baird & Associates Ltd.
b. Prepared By

Gordon G. Thomson, P.E.
c. Signed and Stamped By

10/29/2019
d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act - Following the review of the above-referenced Notice of Intent and based on the information provided in this application, the Department finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

a. ☐ Public Water Supply
b. ☐ Land Containing Shellfish
c. ☐ Prevention of Pollution
d. ☐ Private Water Supply
e. ☐ Fisheries
f. ☒ Protection of Wildlife Habitat
g. ☐ Groundwater Supply
h. ☒ Storm Damage Prevention
i. ☒ Flood Control

2. This Department hereby finds the project, as proposed, is (check one):

Approved subject to:

a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. The Department orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

B. Findings (cont'd)

Denied because:

b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued. A description of the performance standards which the proposed work cannot meet is attached to this Order.

c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order.**

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

3. ☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and wetland boundary (if available) _____ a. linear feet

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. ☐ Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5. ☐ Bordering Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet
6. ☐ Land Under Waterbodies and Waterways	a. square feet	b. square feet	c. square feet	d. square feet
	e. c/y dredged	f. c/y dredged		
7. ☐ Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8. ☐ Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. ☐ Riverfront area	a. total sq. feet	b. total sq. feet		
Sq feet within 100 feet	c. square feet	d. square feet	e. square feet	f. square feet
Sq feet between 100-200 feet	g. square feet	h. square feet	i. square feet	j. square feet

B. Findings (cont'd)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

10. ☐ Designated Port Areas - Indicate size under Land Under the Ocean, below

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
11. ☐ Land Under the Ocean	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
12. ☐ Barrier Beaches - Indicate size under Coastal Beaches and/or Coastal Dunes below.				
13. ☒ Coastal Beaches	104,860 a. square feet	94,680 b. square feet	c. c/y nourish.	d. c/y
14. ☐ Coastal Dunes	a. square feet	b. square feet	c. c/y nourish.	d. c/y
15. ☒ Coastal Banks	2,730 a. linear feet	2,465 b. linear feet		
16. ☐ Rocky Intertidal Shores	a. square feet	b. square feet		
17. ☐ Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. ☐ Land Under Salt Ponds	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
19. ☐ Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet

20. ☐ Fish Runs - Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above

	a. c/y dredged	b. c/y dredged
21. ☒ Land Subject to Coastal Storm Flowage	104,860 a. square feet	94,680 b. square feet

C. General Conditions Under Massachusetts Wetlands Protection Act

(only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.

2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.

3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.

5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.

6. If this Order constitutes an Amended Superseding Order of Conditions, this Amended Superseding Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Superseding Order will expire on _____ unless extended in writing by the Department.

7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.

9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Department on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.

10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,
    "Massachusetts Department of Environmental Protection" [or, "MA DEP"]
    "File Number SE48-3115"

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.

12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Department of Environmental Protection.

13. The work shall conform to the plans and special conditions referenced in this order.

14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Department in writing whether the change is significant enough to require the filing of a new Notice of Intent.

15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Department.

18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Department, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. **The work associated with this Order (the "Project") is** (1) ☐ **is not** (2) ☒ **subject to the Massachusetts Stormwater Standards. If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**

a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;
iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement) for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMPs Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, and acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

g) The responsible party shall:
   1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
   2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
   3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Brief Project Description: The installation of an approximately 767 linear foot Geotube extension to the North and an approximately 1,916 linear foot Geotube extension to the South of the existing Geotube, smaller geotextile returns, planting of vegetation on the face of the bluff, and ongoing mitigation and monitoring of project performance.

Special Conditions (See attached sheet(s) for additional Special Conditions numbered 1 through 22.

D. Findings Under Municipal Wetlands Bylaw or Ordinance

To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no jurisdiction to supersede the local by-law order.

E. Issuance

This Order is valid for three years from the date of issuance, unless otherwise specified as a special condition pursuant to General Conditions 4 or 6.

Issued by: **Massachusetts Department of Environmental Protection:**

Signature:

James Mahala, Chief
Wetlands & Waterways Program

This Order is issued to the applicant as follows:

☐ by Hand delivery on:

Date

☒ by certified mail on:
JAN 28 2020

Certified Mail #7017 1450 0000 0281 4220

F. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 10 of this form shall be submitted to the Department.

Massachusetts Department of Environmental Protection – Southeast Region
Issuing Authority

To: Massachusetts Department of Environmental Protection – Southeast Region
Issuing Authority

Please be advised that the Order of Conditions for the Project at:

59-119 Baxter Road, Nantucket
Project Address – Street & Town

SE48-3115
DEP File Number

Has been recorded at the Registry of Deeds of:

Nantucket
County

Book

Page

For: _____
Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

JM/nc

G. Appeal Rights and Time Limits

The applicant, the landowner, any person aggrieved by the Superseding Order, Determination or other Reviewable Decision as defined at 310 CMR 10.04, who previously participated in the proceedings leading to this Reviewable Decision, the conservation commission, or any ten (10) residents of the city or town where the land is located if at least one resident was previously a participant in the permit proceeding, are hereby notified of their right to appeal this Reviewable Decision pursuant to M.G.L. c.30A, § 10, provided the request is made by certified mail or hand delivery to the Department, along with the appropriate filing fee and a MassDEP Fee Transmittal Form within ten (10) business days of the date of issuance of this Superseding Order or Determination, and addressed to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
One Winter Street, 2nd Floor
Boston, MA 02108

A copy of the request (hereinafter also referred to as Appeal Notice) shall at the same time be sent by certified mail or hand delivery to the Conservation Commission, the applicant, the person that requested the Superseding Order or Determination, and the issuing office of the MassDEP at:

MassDEP
20 Riverside Drive
Lakeville, MA 02347

In the event that a ten resident group requested the Superseding Order or Determination, the Appeal Notice shall be served on the designated representative of the ten resident group, whose name and contact information is included in this Reviewable Decision (when relevant).

Contents of Appeal Notice

An Appeal Notice shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6) and 310 CMR 10.05(7)(j), and shall contain the following information:

(a) the MassDEP Wetlands File Number, name of the applicant, landowner if different from applicant, and address of the project;

(b) the complete name, mailing address, email address, and fax and telephone numbers of the party filing the Appeal Notice; if represented by consultant or counsel, the name, fax and telephone numbers, email address, and mailing address of the representative; if a ten residents group, the same information for the group's designated representative;

(c) if the Appeal Notice is filed by a ten (10) resident group, then a demonstration of participation by at least one resident in the previous proceedings that led to this Reviewable Decision;

(d) if the Appeal Notice is filed by an aggrieved person, then a demonstration of participation in the previous proceeding that lead to this Reviewable Decision and sufficient written facts to demonstrate status as a person aggrieved;

(e) the names, telephone and fax numbers, email addresses, and mailing addresses of all other interested parties, if known;

(f) a clear and concise statement of the alleged errors contained in the Department's decision and how each alleged error in inconsistent with 310 CMR 10.00 and does not contribute to the protection of the interests identified in the Wetlands Protection Act, M.G.L. c.131, § 40, including reference to the statutory or regulatory provisions that the party filing the Appeal Notice alleges has been violated by the Department's Decision, and the relief sought, including any specific desired changes to the Department's decision;

(g) a copy of the Department's Reviewable Decision that is being appealed and a copy of the underlying Conservation Commission decision if the Reviewable Decision affirms the Conservation Commission decision;

(h) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant and the conservation commission; and

(i) if asserting a matter that is Major and Complex, as defined at 310 CMR 10.04, a statement requesting that the Presiding Officer make a designation of Major and Complex, with specific reasons supporting the request.

Filing Fee and Address

A copy of the Appeal Notice along with a MassDEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, Massachusetts 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Superseding Order of Conditions for Siasconset Beach Preservation Fund/Town of Nantucket, File No. SE 48-3115

Special Conditions:

1. This Superseding Order of Conditions (SOC) permits installation of an approximately 767 linear foot Geotube extension to the north and a portion of the approximately 1,916 linear foot proposed Geotube extension to the south in order to prevent storm damage to pre-1978 homes, installation of smaller geotextile returns on the ends of the Geotubes to prevent flanking and minimize end effects, planting of vegetation on the face of the coastal bank, and ongoing mitigation (beach nourishment) and monitoring. The proposed southern Geotube extension and smaller geotextile returns shall terminate at the southern boundary of Lot 63. Coir fiber roll returns may be installed on Lot 61 as needed. This SOC denies the proposed installation of Geotubes at the southern end (Lots 61, 59, and 55) of the approximately 1,916 linear foot southern Geotube extension. The Department has determined that the proposed Geotubes on Lots 61, 59 and 55 do not meet the performance standards for Coastal Banks at 310 CMR 10.30 (3). Specifically, the Department has determined that the proposed Geotubes are not required to prevent storm damage at this time, and there may be feasible alternatives to a coastal engineering structure. The SOC also denies the proposed installation of Geotubes along the southern end of the proposed project area where a coastal dune fronts the toe of the coastal bank (Lots 55, 53, 51B, and 51A). The Department has determined that the proposed Geotubes on Lots 55, 53, 51B, and 51A do not meet the performance standards for Coastal Banks at 310 CMR 10.30 (3). Specifically, the Department has determined that the proposed Geotubes are not required to prevent storm damage at this time, and there may be feasible alternatives to a coastal engineering structure.

2. Notice of work commencement shall be given to the Nantucket Conservation Commission (NCC) and the Department at least 48 hours prior to the commencement of work.

3. Prior to installation of the Geotube extensions on lots 63-87 and 105-119 and returns, the proponents shall ascertain the width of the beach seaward of the existing Geotubes to determine whether there is sufficient beach width landward of mean high water (MHW) to conduct activities associated with the installation of the Geotubes and returns in accordance with the proposed construction methodology. In the event the beach is not sufficiently wide to allow Geotube installation in accordance with the proposed construction methodology, the proponents shall submit an alternative construction methodology for the Department's review and approval.

4. Prior to installation of the Geotube extensions on lots 63-87 and 105-119 and returns, the proponents shall mark the MHW line with surveyed stakes, obtain Global Positioning System (GPS) coordinates along the MHW line and shall maintain the stakes throughout the duration of construction. GPS coordinates shall be submitted to the Department and the NCC within 2 weeks of collection.

5. The staked position of the MHW line shall serve as a limit of work throughout the duration of construction. No work is allowed seaward of the MHW line under this SOC.

6. Access to the beach shall be from Hoick's Hollow north of the project area. A gate or similar structure shall be installed to control vehicular access to the beach at the Hoick's Hollow access point.

7. All sand used to fill and cover the Geotubes shall be imported from an off-site source and shall be clean sediment compatible in terms of grain size with the existing beach sediments. The Department reserves the right to request the grain size analysis of sediments used for beach nourishment.

8. As proposed, the smaller geotextile returns shall be installed in a manner to form closure between the existing Geotubes and the adjacent bluff without excavation into the coastal bank. All beach sand excavated to install the returns shall remain on the beach and shall be used to restore the beach following construction.

9. The ongoing beach monitoring/survey program currently conducted by the Woods Hole Group shall continue. The monitoring program shall be conducted on a **quarterly basis for the first 3 years** in order to timely identify beach impacts that may be attributable to the Geotubes and to assess whether the mitigation program is adequate. Beach profiles shall be taken on a quarterly basis along the 24 proposed profile lines. Beach profiles shall be taken from the toe of the coastal bank, coastal dune or Geotube seaward to the –5 foot MLW contour.

Beach profile data and analysis shall be submitted to the Department and the NCC within 30 days of completion of the quarterly survey. Following 3 years of quarterly surveys, the proponents may request the Department to re-assess the need for quarterly beach profiles. Such a request shall be accompanied with a report that provides reasonable justification for a reduced survey schedule. The final decision on any changes to the monitoring program rests with the Department.

10. As proposed, offshore (bathymetric) profiles shall be taken on an annual basis. Offshore profiles shall be taken out to the –25 foot to -35 foot MLW92 contour or 2,000 to 3,000 feet offshore, whichever is less. The bathymetric survey transects shall overlap the beach profiles (no gaps) and the tide gage used during the survey shall be surveyed into the same datum as the beach profiles. Bathymetry profile data and analysis shall be submitted to the Department and NCC within 30 days of completion of the survey.

11. An annual assessment report summarizing the beach and bathymetric profile monitoring program shall be submitted to the Department and the NCC each year. This report shall, at a minimum, provide an analysis of beach changes including volumetric changes between surveyed transects, assess location of the top of coastal bank and estimate bank retreat over the previous 12 months and calculate bank volume loss in the project area and 300 feet to the north and south. In addition, the report shall recommend any necessary changes to the beach nourishment program for the Department's review and approval.

12. Post-Storm monitoring reports shall be submitted following all significant storms. A storm will be considered "significant" if there are sustained winds over 40 mph over at least a 6 hour period according to NOAA's National Climate Data Center, Nantucket Memorial Airport station. The post-storm monitoring report shall include, at a minimum, photo-documentation of the condition of the Geotubes and nourishment sand within the project area, estimate of the volume of sand lost from the sand template, estimate of the beach level in front of the Geotubes to determine if replenishment is needed, estimate of volume of sand (if necessary) and schedule for delivery, identification of the location of any exposed geotextile or of any repair required to the geotextile, and visual observation of the ends of the Geotubes to determine if flanking is occurring. Such reports shall be submitted to the Department and the NCC as soon as possible following all significant storms but no later than 7 days from the end of the storm.

13. Sand mitigation shall be at a rate of 22 cubic yards per linear foot (cy/lf) per year in accordance with the following schedule for the first 3 years:

    a. Provide initial cover of 22 cy/lf during and/or immediately following construction of the Geotube extensions and returns.

    b. Annually in April: Provide additional sand and/or adjust the existing template to obtain a minimum two foot cover over the Geotubes to protect them from UV degradation. The volume of any sand placed in April shall be recorded and counted towards the annual 22 cy/lf requirement.

    c. Annually in September-November: Place an additional volume of sand, to ensure a substantial portion of the sand template volume (10-15 cy/lf) is available at the onset of the winter storm season. Throughout the winter, place additional sand on an as-needed basis, in accordance with the replenishment trigger in the Milone & MacBroom's November 12, 2013 letter (i.e., if half the vertical height of the lowest Geotube is exposed, place a minimum of 2 cy/lf). If the balance of the 22 cy/lf volume is not placed in its entirety before March 1, the balance of the sand will be placed by March 31.

    d. Delivery tickets from sand supplier shall be provided annually to the Department and the NCC to document the total volume of sand provided on a yearly basis.

    e. Following 3 years of mitigation at a rate of 22 cubic yards per linear foot per year, the proponents may request the Department to re-assess the rate of sand mitigation. Such a request shall be accompanied with a report that provides reasonable justification for a modified mitigation rate. The final decision on any changes to the monitoring program rests with the Department.

14. If there is not adequate space to provide the entire mitigation volume within the project area footprint, then any remaining sand shall be placed in a berm at the toe of the coastal bank or dune and landward of MHW within 300 feet of the ends of the Geotubes. Any additional sand placed outside of the project area shall be equally distributed to the areas north and south of the project area.

15. Failure of the Siasconset Beach Preservation Fund (SBPF) to conduct the actions set out in subsections (a) to (e) herein shall constitute a project failure ("failure criteria") if not performed within the stipulated timeframes or within such other reasonable periods of time as determined by the Department in the event of a delay in performance outside the control of SBPF, or if there are unmitigated adverse impacts from the project. The "failure criteria" include:

    a. Failure to provide the sand mitigation as required in Special Conditions #s 7, 13, and 14.

    b. Failure to conduct the shoreline monitoring and post-storm monitoring as required in Special Conditions #s 9 through 12.

    c. Failure to repair and/or replace damaged geotextile tubes in a timely manner. If repair or replacement cannot be accomplished within 30 days from the date of the damage, SBPF shall notify the Department and the NCC before 30 days have elapsed and provide a repair schedule for Department review and approval.

    d. Excessive loss in updrift or downdrift beach cross section that can be attributed to the project. If the quarterly monitoring program identifies excessive loss to the adjacent shoreline (compared to historical data) that may be attributable to the project, then SBPF shall contact the Department and the NCC within 30 days of the completion of the quarterly survey. Upon notice, the Department shall commence an information gathering and consultation process to evaluate whether the shoreline loss is a result of the project. Following the conclusion of the evaluation the Department shall determine an appropriate course of action to address the beach loss associated with the project which may include, but is not limited to, changes to the placement of the sand template, an increase in the volume of sand mitigation, or project removal if impacts cannot be effectively mitigated. SBPF shall implement the Department's required mitigation within 30 days of receipt of written notification from the Department.

    e. Failure to maintain adequate beach width in front of the Geotubes. If the beach in the project area erodes so that the position of MHW migrates landward to the seaward edge of the second tier of geotextile tubes for any two consecutive quarterly surveys, then within 30 days of completion of the second quarterly survey SBPF shall contact the Department and the NCC. Upon notice, the Department shall commence an information gathering and consultation process. Following the conclusion of the evaluation, the Department shall determine an appropriate course of action which may include, but is not limited to, changes to the placement of the sand template, an increase in the volume of sand mitigation, or Geotube removal if impacts cannot be effectively mitigated. SBPF shall implement the Department's required mitigation within 30 days of receipt of written notification from the Department.

16. In the event certain failure criteria have been met and the Department orders Geotube removal, then the geotextile fabric shall be cut, removed and properly disposed of. Following removal of the geotextile fabric, sand from the Geotubes shall be spread along the beach landward of MHW. SBPF and the Town shall maintain the escrow fund in place as of the date of this SOC to ensure the availability of funds to pay for the removal of the Geotubes. Lack of adequate funds in the escrow account shall not negate SBPF's requirement for Geotube removal.

17. The SBPF shall be responsible for the retrieval and proper disposal of all geotextile products associated with this project in the event wave action and erosion destroys or otherwise causes damage to the Geotube system.

18. As proposed, exposed areas on the face of the coastal bank, other than the upper 5-7 feet between lots 109 and 115 Baxter Road, may be stabilized using biodegradable erosion control blankets planted with beach grass and/or

other indigenous coastal vegetation. The erosion control blankets and plantings shall be installed with hand tools with workers repelling down the bank face.

19. All construction refuse shall be removed from the site and disposed of in compliance with all local, State, and Federal laws and regulations.

20. Upon completion of the proposed installation of the North and South Geotube extensions and returns, a partial Certificate of Compliance shall be requested in accordance with General Condition No. 11, and under the provisions of 310 CMR 10.05 (9)(d). A statement from a Professional Engineer or a Professional Land Surveyor registered in the Commonwealth of Massachusetts certifying compliance with the plans and conditions of this Order shall accompany the request for a partial Certificate of Compliance.

21. A portion of the proposed project is located within mapped *Priority and Estimated Habitat* of state-protected rare species by the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife (Division). As such, the proponent must adhere to the following conditions:

    a. All work, including all access locations (e.g. Hoicks Hollow), located within Priority Habitat is prohibited during the period **April 1 – August 31**, unless a monitoring and protection plan for state-listed species has been approved in writing by the Division.
    b. To reduce end scour and impacts to the Coastal Dune located within Priority Habitat, prior to the start of work, a nourishment plan that enhances or maintains Coastal Dune shall be submitted to the Division for review and written approval.
    c. The Applicant has the responsibility of protecting breeding Piping Plovers and state-listed species of terns that may be on this section of beach. Therefore, the Applicant must allow regular monitoring for the presence of Piping Plovers and terns by a qualified shorebird monitor, as determined by the Division, during the period April 1 – August 31 and shall allow any nests, scrapes, or unfledged chicks to be protected with symbolic fencing (warning signs and twine fencing).
    d. Within sixty (60) days of completion of work, the Applicant shall submit to the Division as-built site plans and a brief written report including photographs showing final constructed conditions with particular emphasis on demonstrating compliance with the conditions herein.
    e. The Division authorization is valid for 5 years from the date of issuance and limited to the project described herein.
    f. Upon filing for renewal, extension, or amendment of the Superseding Order of Condition, the applicant shall contact the Division for written response regarding impacts to Resource Area habitat of state-listed wildlife.

22. This SOC does not relieve the applicant/owner from complying with the Town of Nantucket Wetland Bylaw.

Record & Assessed Owners: 59-119 Baxter Road - 2018

Property Address	Map & Parcel	Record Title Holder	Assessed Owner	Recording information
59 Baxter Road	49-20	Kevin F. Dale, Trustee of 59 Canopache Nominee Trust	Kevin F. Dale, Trustee of 59 Canopache Nominee Trust	C19072
61 Baxter Road	49-21	Ann R. Healey, Trustee of the Mayflower QPRT	Ann R. Healey, Trustee of the Mayflower QPRT	1325/277
63 Baxter Road	49-22	Elizabeth Singer, Trustee of the 64 Baxter Road Realty Trust	Elizabeth Singer, Trustee of the 64 Baxter Road Realty Trust	C19844
65 Baxter Road	49-23	Thomas Tuttle & Sharmila Tuttle	Thomas Tuttle & Sharmila Tuttle	1200/102
67 Baxter Road	49-24	Morning Light LLC, Margaret Hearst manager	Morning Light LLC, Margaret Hearst manager	845/269
69 Baxter Road	49-25	Richard & Marianne L. Moscicki	Richard & Marianne L. Moscicki	1294/117
71 Baxter Road	49-26.1	John C. Merson and Carol Bunevich	John C. Merson and Carol Bunevich	C21251
73 Baxter Road	49-27	Christian M. Darby	Christian M. Darby	1315/310
75 Baxter Road	49-30	Sankaty Bluff Group, LLC, John E. Osborn and Deborah P. Osborn manager	Sankaty Bluff Group, LLC, John E. Osborn and Deborah P. Osborn manager	1152/78
77 Baxter Road	49-31	Joshua Posner and Eileen Rudden	Joshua C. Posner and Eileen M. Rudden	C17538
79 Baxter Road	49-32	Helmut F. Weymar & Caroline S. Weymar	F. Helmut Weymar & Caroline S. Weymar	C12804
81 Baxter Road	49-33	William D. & Deborah Futter Cohan	William D. & Deborah Futter Cohan	C23689
83 Baxter Road	49-34	Marie Dostalier and Richard Touchette	Marie Dostalier and Richard Touchette	C23698
85 Baxter Road	49-35	Siasconset Preservation Fund, Inc. - Joshua Posner President	Siasconset Preservation Fund, Inc. - Joshua Posner President	C26035
87 Baxter Road	49-8	Samuel Furrow & Ann Furrow	Samuel Furrow & Ann Furrow	839/295
91 Baxter Road	48-22	Daniel L. Korengold, Trustee of D&M Baxter Road Nominee Trust	Daniel L. Korengold, Trustee of D&M Baxter Road Nominee Trust	1352/45
93 Baxter Road	48-21	Steven T. & Erin P. Freeman	Steven T. & Erin P. Freeman	1069/97
97 Baxter Road	48-19	Lawrence C. & Margaret McQuade	Lawrence C. & Margaret McQuade	C17087
99 Baxter Road	48-18	Ann B. Furrow	Ann B. Furrow	C20681
101 Baxter Road	48-17	101 Baxter Road LLC, James E. Walker and Deborah C. Walker managers	101 Baxter Road LLC, James E. Walker and Deborah C. Walker managers	01427/0341
105 Baxter Road	48-15	Marilee B. Matteson, as Trustee of Marilee Brill Matteson Nominee Trust	Marilee B. Matteson, as Trustee of Marilee Brill Matteson Nominee Trust	C25689
107 Baxter Road	48-14.1	Whitney A. Gifford, Trustee of S.C. Nominee Trust	Hannah J. Gretz, Trustee of S.G. Nominee Trust	01285/0217
107A Baxter Road	48-14	Whitney A. Gifford, Trustee of S.G. Nominee Trust	Whitney A. Gifford, Trustee of S.G. Nominee Trust	647/191
109 Baxter Road	48-12	Justine Mascioli Kenney, Trustee of Frederick P. Mascioli Living Trust	Justine Mascioli Kenney, Trustee of Frederick P. Mascioli Living Trust	C26159
113 Baxter Road	48-11	Loretta Yoder and Kyle L. Latshaw	Loretta Yoder and Kyle L. Latshaw	925/147
115 Baxter Rd	48-10	115 Baxter LLC, John Khawam manager	115 Baxter LLC, John Khawam manager	1513/335
117 Baxter Rd	48-9	Stephen B. Cohen	Stephen B. Cohen	575/163
119 Baxter Rd	48-7	Sconset Trust, Inc. - Elliot Gewirtz President	Sconset Trust, Inc. - Elliot Gewirtz President	C18718
Sconset Bluff	49-9	Town of Nantucket	Town of Nantucket	102/119
Sconset Bluff	48-6	Town of Nantucket	Town of Nantucket	185/52
Sconset Bluff	48-8	Town of Nantucket	Town of Nantucket	C1702
Sconset Bluff	48-5	Sconset Trust, Inc. - Elliot Gewirtz President	Sconset Trust, Inc. - Elliot Gewirtz President	

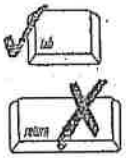
Massachusetts Department of Environmental Protection

Adjudicatory Hearing Fee Transmittal Form

IMPORTANT! This form is intended for fee transmittal only. The contents of a request for an adjudicatory appeal (Notice of Claim) are established at 310 CMR 1.01(6) and the substantive statutes and regulations governing the Department's action.

A. Person/Party Making Request

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Name and address of person or party making request:

Name - If appropriate, name group representative

Street Address

City | State | Zip Code

2. Project Information:

Street Address

City | State | Zip Code

DEP File or ID Number | $ Amount of filing fee attached

Email Address

B. Applicant (if applicable)

1. Name and address of applicant:

Name - If appropriate, name group representative

Street Address

City | State | Zip Code

Email Address

C. Instructions

1. Send this form and check or money order of $100.00 payable to the Commonwealth of Massachusetts to the MassDEP Lockbox at:

   Department of Environmental Protection
   P.O. Box 4062
   Boston, MA 02211

2. Send a **copy** of this form and a **copy** of the check or money order with the Request for Adjudicatory Appeal (Notice of Claim) to:

   Case Administrator
   Office of Appeals and Dispute Resolution
   One Winter Street
   Boston, MA 02108