CREDERE ASSOCIATES, LLC
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Westbrook, Maine 04092
Phone: 207-828-1272
Fax: 207-887-1051

April 12, 2019

Mr. Nick Noons
Rhode Island Department of Environmental Management
(401) 222-2797
Via email: Nicholas.Noons@dem.ri.gov

Subject: **Underground Storage Tank Closure Report**
Gould Island – Fire Station (FUDS No. D01RI033800; NED Site No. 12)
Narragansett Bay, Jamestown, Rhode Island, 02835

Dear Mr. Noons:

Credere Associates, LLC (Credere) has completed the assessment of one (1) 1,500-gallon underground storage tank (UST) that was removed from the Fire Station located on Gould Island (FUDS No. D01RI033800; NED Site No. 12) in Narragansett Bay, Jamestown, Rhode Island, (Site) on March 13, 2019. This closure assessment was completed in accordance with Rhode Island Department of Environmental Management (RIDEM) Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials and the RIDEM UST Closure Assessment Guidelines.

Based on the findings of Credere's closure assessment and in accordance with the approval of RIDEM, no further action is warranted with regard to the UST. The findings of Credere's closure assessment are presented in the following report. If there are any questions, comments, or concerns, please contact the undersigned.

Sincerely,

CREDERE ASSOCIATES, LLC

Allison Drouin

Allison Drouin, CG, PG
Geologist/Project Manager

UST Closure Assessment Report Checklist

Complete this form in its entirety and include with all Closure Assessment Reports. This checklist is intended to aid in the submission process and ensure reports contain all of the information required in Rules 13.11(B) and (C). This form does not replace the closure assessment report, and it is intended for submission to RIDEM only.

Facility Name:	Gould Island - Fire Station (NED Site No. 12)	UST Facility ID#:	4848
Facility Address:	Gould Island, Narragansett Bay, Jamestown, Rhode Island	LUST Case #:	
		Closure Date:	March 13, 2019

Directions: For each requirement listed below, enter the page number where the relevant information can be found in the Closure Assessment Report. Failure to include page numbers may delay review and approval. If an item is not applicable, simply state that it is not applicable in the comments field and provide an explanation in the Closure Assessment Report.

Included?	Rule Description	Page #	Comments
☑	A background description of the site including location, use of the facility, and a summary of any available tank and line leak detection results [Rule 13.11 (B)(1)]	1	
☑	A locus map using the U.S. Geological Survey 7.5 minute quadrangle map [Rule 13.11 (B)(2)]		Attached as Figure 1
☑	A detailed site plan showing the location of all former or existing USTs, piping, dispensers, buildings, utilities, monitoring wells, drinking water wells, soil screening locations, soil sampling locations and any other pertinent site features [Rule 13.11 (B)(3)]		Attached as Figure 2
☑	Descriptions of all USTs closed including size, construction type, depth to tank bottom, age and stored material [Rule 13.11 (B)(4)]	1	Description extends onto page 2.
☑	A description of the condition of the USTs and piping including extent of corrosion, identification of any holes and any other indication of leakage [Rule 13.11 (B)(5)]	4	
☑	Photographic documentation of the condition of each tank removed [Rule 13.11 (B)(6)]		Attached as Appendix A.
☑	A description of the soil conditions in the excavation zone such as soil classification, gradation, extent of compaction and any other notable physical characteristics [Rule 13.11 (B)(7)]	2	
☑	A description of soil contamination, including visual and olfactory observations, field screening and laboratory analytical methods used and all results [Rule 13.11 (B)(8)]	5	
☑	A description of groundwater encountered in the excavation zone including depth to water and appearance with respect to the presence of any sheen or free product [Rule 13.11 (B)(9)]	3	
☑	A description of groundwater obtained from monitoring or observation wells, where present, including any gauging results [Rule 13.11 (B)(10)]	3	
☑	Identification of the DEM groundwater classification at the site and surrounding areas, the availability of public water and presence of private or public wells [Rule 13.11 (B)(11)]	2	Groundwater classification on page 3.

Included?	Rule Description	Page #	Comments
☑	Any potential receptors such as, but not limited to, surface waters, basements, storm drains, sewer lines or other utilities where contamination is identified [Rule 13.11 (B)(12)]	2	
☑	Description of the management of all excavated contaminated soil, including proper cover while stockpiled on-site and documentation of proper disposal [Rule 13.11 (B)(13)]	4	No evidence of contamination observed in excavated soil
☑	Documentation of proper disposal of the tank(s) and the residual sludge material [Rule 13.11 (B)(14)]	4	
☑	Any other information or documentation required to complete the closure assessment [Rule 13.11 (B)(15)]		Laboratory analytical reports and permanent closure applications included in appendices.
☑	Conclusions as to whether a release has occurred and recommendations for further investigation and/or remediation. [Rule 13.11 (B)(16)]	7	
☑	A statement signed by the registered professional engineer, or the certified professional geologist, or the registered professional geologist, who prepared the report or who directly supervised preparation of the report, certifying the accuracy of the information contained in the report [Rule 13.11 (C)(1)]	8	
☑	A statement signed by the facility owner/operator that the report is complete and accurate. [Rule 13.11 (C)(2)]	8	

Prepared by:

Company Name: Credere Associates, LLC

Contact Name: Allison Drouin

Company Address: 776 Main Street, Westbrook, Maine 04092

E-mail: adrouin@crederellc.com

Phone #: 2078281272 ext. 15

Signature: Allison Drouin Digitally signed by Allison Drouin DN: cn=Allison Drouin, o=Credere Associates, LLC, ou, email=adrouin@crederellc.com, c=US Date: 2019.04.12 08:21:36 -04'00'

Submission Date:

Reset Form

Print Form

Last Modified 1/30/2014

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Underground Storage Tank Closure Report

Gould Island – Fire Station (FUDS No. D01RI033800; NED Site No. 12)
Narragansett Bay
Jamestown, Rhode Island

Prepared For:

Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island

On Behalf Of:

United States Army Corps of Engineers
New England District
696 Virginia Road
Concord, Massachusetts

April 12, 2019

Project Tracking Number
19001488

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APPENDICES

1. INTRODUCTION

Credere Associates, LLC (Credere) has completed this closure of an underground storage tank (UST) for the Rhode Island Department of Environmental Management (RIDEM; the property owner) as part of cleanup activities conducted under contract with the United States Army Corps of Engineers (USACE) for Gould Island (FUDS No. D01RI033800), located in Narragansett Bay, Jamestown, Rhode Island (Site). The closure of the UST was completed in accordance with the RIDEM Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials (RIDEM UST Rules) and the RIDEM UST Closure Assessment Guidelines.

Figure 1 shows the location of the Site in Jamestown, Rhode Island. **Figure 2** is a detailed Site map depicting the location of the UST, piping, and other pertinent features of the Site, as well as soil sampling locations in the excavation area.

1.1 PURPOSE OF THE SITE ASSESSMENT

The purpose of this assessment is to document the removal of the following UST and at the time of facility closure or abandonment to assess if discharges of oil have occurred requiring notification of the commissioner and corrective action by the owner, operator or another responsible party:

- one 1,500-gallon UST that presumably contained fuel oil based on the proximity to the adjoining boiler room

This UST was removed to allow for improved assessment of the UST vicinity. According to the RIDEM UST Rules, the UST in question was exempt from Closure Reporting because it was a consumptive use fuel oil UST that supplied fuel to the adjoining boiler room. However, during initial phases of a preceding Remedial Investigation for the larger island, petroleum contamination was identified in soil and groundwater in the vicinity of the nearby 12SB3/12OBMW1. The source of the contamination was presumed to be the UST (this was found not to be the case as discussed herein); therefore, a Closure Assessment to document these findings was considered warranted.

1.2 FACILITY INFORMATION

The Facility is located on Gould Island located in Narragansett Bay, Jamestown, Rhode Island, as shown on **Figure 1**. The 39.15-acre Site is the southern portion of Gould Island that has been assessed under the Defense Environmental Restoration Program (DERP). The Site is currently owned by RIDEM Division of Fish and Wildlife and is designated a bird sanctuary.

Between 1918 and 1920, the island was seized by the United States for use by the U.S. Navy and Marines. Initial construction included marine barracks, air hangars, a water tower and infrastructure, piers at the northern and southeast ends of the island, torpedo storage, bunkers, the south powerhouse, and a railroad network. Additional buildings were constructed in the 1940s, which included additional hangars, another power station, additional barracks, a firing pier, and

other buildings to support World War II efforts. It is presumed the fire station was constructed as part of the first phase of construction in the 1920s. In 1975 and 1989, parcels of the island were transferred to the State of Rhode Island to form the current 39.15-acre Site. The Site has been generally abandoned since and is heavily overgrown with vegetation.

The UST was located on the northern side of the fire station (NED Site No. 12) in the central portion of the island just outside the former boiler room. The area north of the fire station was cleared to allow for access to the UST.

It is unclear when the UST was installed and the UST was not registered with the state of RI. The single-walled steel UST was located less than 5 feet north of the fire station and the depth to tank bottom was observed to be approximately 5.5 feet below ground surface (bgs). The tank measured approximately 16 feet long by 4.5 feet in diameter. The former contents and use of the UST are unknown; however, this UST was likely used to store No. 2 fuel oil to supply the adjoining boiler room. No leak detection monitoring or equipment was observed. One pipe was observed leading from the top of the west side of the UST in the direction of the fire station boiler room. This pipe had been previously cut and did not extend fully to the fire station building. A distinct fill pipe was not observed but vent pipes were observed extending above the northeast corner of the adjoining building.

1.3 SURROUNDING LAND USE AND RECEPTORS

The Facility is located on Gould Island in Narragansett Bay. The only portions of the island that are not considered the Site are operated by the Navy and are manned sporadically. The only other surrounding land use is the Narragansett Bay. The island is used for limited recreational purposes by permit, by trespassers, and otherwise is an established bird sanctuary.

No utilities are currently provided to the Site; however, the infrastructure remains in place for the formerly utilized private drinking water and sewer systems. The northern portion of Gould Island is owned and operated by the Navy who maintains the rights to the private drinking water supply wells and private septic systems throughout the island. None of the onsite infrastructure is in active use. The State of RI wishes to maintain the Site groundwater as a GA consumable source.

Based on these land uses, current receptors to the UST facility are limited to the occasional recreator or trespasser through direct contact and onsite biota.

1.4 PHYSICAL SETTING

Surficial Geology

According to the online RIDEM Environmental Resource Map, the surficial geology at the Site is mapped as Newport silt loam. Newport silt loam is described as nearly level, well-drained soil on the crests of drumlins and glacial till plains.

During the tank removals, surficial geology at the Site was observed to be dark brown fine to medium sand and loam underlain by sand with fine to coarse gravel, presumably fill material used when the UST was installed.

Bedrock Geology

According to the online RIDEM Environmental Resource Map, the bedrock geology at the Site is located over the Narragansett Bay Group of the Rhode Island Formation, which is comprised of meta-sandstone, meta conglomerate, schist, carbonaceous schist, and graphite. Bedrock was not observed during this UST closure; however, observations made during the Remedial Investigation indicate the bedrock throughout the island to be consistent with the mapped description.

Hydrology

Groundwater at Gould Island is classified as GA groundwater for the Site and adjoining property to the north as there is no public drinking water supplied to the Site. There is no defined groundwater flow direction as groundwater throughout the Site flows radially to the surrounding Narragansett Bay. Depth to groundwater at the monitoring well located adjacent to the UST was observed at 8 feet bgs. Groundwater was not observed during UST closure activities at the Site.

2. UST REMOVAL ACTIVITIES

The following sections summarize UST removal activities completed at the Site in February and March 2019. Photographs documenting removal activities at the Facility are included in **Appendix A**.

2.1 PERMANENT CLOSURE ACTIVITIES

A Permanent Closure Application for USTs was submitted to RIDEM on February 15, 2019. A copy of the Permanent Closure Application is included in **Appendix B**. RIDEM approved the removal on February 20, 2019. A copy of the approval letter is also included in **Appendix B**.

National Response Corporation (NRC) of Portland, Maine, uncovered the tank and performed the tank cleaning, management and disposal; EnviroVantage, Inc. (EV) of Epping, New Hampshire, performed the tank excavation and physical removal; and Credere provided environmental oversight and assessment during the entire process. In addition, a RIDEM representative and USACE representative were present during removal activities.

One 1,500-gallon UST was uncovered, but not removed, on February 20, 2019 (**Photographs 1 and 2**). The following day, NRC gauged the tank and observed the product contained within the tank. To access the tank product, the single pipe extending from the top of the tank was broken off. Interior conditions of the tank were monitored using a multi-gas detector and conditions were determined to be non-explosive. The product was observed to be mostly water (90%) mixed with minimal residual petroleum product (10%). In addition, Credere screened the accessible north sidewall of the excavation, the soil located adjacent to the piping on the top of the tank, and the stockpiled soil removed from above the tank. The soil was screened using a Rae Systems ppbRAE 3000 photoionization detector (PID) calibrated to a 10 part per million by volume (ppm_v) isobutylene standard and an instrument response factor of 1.0. Screening detections ranged from 0.201 ppm_v to 0.315 ppm_v. No evidence of contamination was observed (i.e., visual staining, olfactory indications, elevated PID detections) in the stockpiled soil or the open excavation; therefore, no cover was placed on the stockpiled soil or excavation during the interim prior to tank removal and subsequent backfill.

On March 11, 2019, a total of approximately 250 gallons of product was removed from the tank (**Photograph 3**) to DOT-approved steel drums. The product was confirmed to be mostly water mixed with residual petroleum product. Once the tank interior conditions were monitored using a multi-gas detector and confirmed to be non-explosive, the tank was cut and interior conditions were again confirmed to remain non-explosive prior to further cleaning the same day using a pressure washer (**Photograph 4**). Waste from the tank was disposed of at ENPRO of Maine in South Portland, Maine. A copy of the manifest is included as **Appendix C**.

On March 13, 2019, the tank was unearthed and removed from the excavation by EV (**Photograph 5**). No petroleum saturated soil or evidence of a petroleum release from the tank was observed in the excavation (**Photograph 6**). Upon removal, the tank was determined to be a single-walled steel tank, and no evidence of holes or pitting was observed (**Photograph 7**). The

tank was cut and rendered unusable prior to transport offsite. The only piping extended from the tank in the direction of the Fire Station, which had been previously cut and removed. The tank was recycled offsite at Allied Recycling Center, Inc. of Walpole, Massachusetts, and a copy of the receipt is included in **Appendix C**.

Soil screening and sampling were completed according to **Section 2.2** and the excavated material was used as backfill after approval from RIDEM. Supplemental material was pulled from the Site to fill the tank void and match surrounding grades.

2.2 SOIL SCREENING AND LABORATORY CONFIRMATORY SAMPLING

Credere collected seven soil screening samples on February 21, 2019 from the preliminary tank excavation at piping joints/elbows and the stockpiled soil. Credere conducted an additional 11 soil screening samples from the tank grave on March 13, 2019. At each screening point, soil was screened for total volatile organic compounds (VOCs) with a PID. PID field screening results were no higher than 0.322 ppm_v, which is below the GA/GAA groundwater threshold of 20 ppm outlined in the RIDEM UST Guidelines for release reporting and to separate contaminated soil for offsite disposal from soil that may be reused onsite as tank grave backfill. Soil screening locations and results from March 13, 2019, are depicted on **Figure 2**.

One composite laboratory soil sample was collected from the base of the tank grave (12UST-S1) and one composite soil sample was collected from the sidewalls of the tank grave (12UST-S2). For each sample, eight soil aliquots were collected from either the sidewalls or the base, respectively, and combined in a decontaminated stainless steel bowl. Soil sample aliquot locations are shown on **Figure 2**. Soil was homogenized and transferred to laboratory provided containers for extractable petroleum hydrocarbon (EPH) analysis. Soil for volatile petroleum hydrocarbon (VPH) analyses was collected from four of the eight aliquot locations (2.5 grams in each location) and preserved in a methanol containing vial. Soil samples were submitted on ice to Environmental Laboratory Accreditation Program (ELAP) certified Absolute Resource Associates (ARA), an independent Rhode Island Department of Health-certified laboratory located in Portsmouth, New Hampshire, for laboratory analysis of VPH and EPH, in accordance with the USACE-approved Quality Assurance Project Plan (QAPP). The UST Closure Assessment Guidelines request total petroleum hydrocarbon (TPH) analysis; however, it was preapproved by the RIDEM Federal Project Manager that EPH and VPH analysis would be acceptable to allow for comparability with other Remedial Investigation data being collected in the Site vicinity.

No free product was observed during this UST closure and field screening results were no higher than 0.322 ppm_v. Laboratory analytical results for soil samples collected from the Site were compared to Method 1 Direct Exposure Criteria for Total Petroleum Hydrocarbons (TPH) of the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, February 2004 (Remediation Regulations) and to the leachability criteria in the UST Closure Assessment Guidelines. Detected EPH and VPH fractions were totaled (using the unadjusted fraction where applicable and reporting limits for non-detects to account for the target compounds) and compared to the GA TPH criteria of 500 ppm.

Confirmatory soil sample laboratory analytical results for samples 12UST-S1 and 12UST-S2 were below reporting limits for VPH carbon fractions and target compounds. EPH carbon fraction and target compounds were detected above laboratory reporting limits with several target polycyclic aromatic hydrocarbons (PAHs) exceeding the Direct Contact Exposure criteria. However, when totaled for TPH comparison, total VPH and EPH fractions were well below the Method 1 Direct Exposure Criteria for TPH of 500 ppm. Laboratory analytical results and applicable regulatory guidelines are summarized in the following embedded table, and the laboratory analytical report is included in **Appendix D**.

Confirmatory Soil Sample Analytical Results

Parameter	RIDEM Remediation Regulations[1] (mg/kg)	Laboratory Result (mg/kg)	
		12UST-S1	12UST-S2
VPH by MassDEP VPH-04-1.1			
All other target compounds	NA	ND<0.1	ND<0.1
Naphthalene	0.8	ND<0.2	ND<0.2
All VPH fractions	NA	ND<4	ND<4
EPH by MassDEP EPH-04-1.1			
phenanthrene	40	**2.1**	**1.7**
anthracene	35	**0.4**	**0.4**
fluoranthene	20	**3.4**	**2.5**
pyrene	13	**3.0**	**1.8**
benzo(a)anthracene	0.9	**1.4**	**1.0**
chrysene	0.4	**1.4**	**1.0**
benzo(b)fluoranthene	0.9	**1.4**	**1.0**
benzo(k)fluoranthene	0.9	**1.3**	**1.0**
benzo(a)pyrene	0.4	**1.5**	**1.1**
indeno(1,2,3-cd)pyrene	0.9	**0.8**	**0.6**
dibenzo(a,h)anthracene	0.4	**0.3**	ND<0.2
benzo(g,h,i)perylene	0.8	**0.9**	**0.6**
C9-C18 Aliphatics	NA	ND<22	ND<23
C19-C36 Aliphatics	NA	**26**	**43**
C11-C22 Aromatics	NA	**39**	**53**
Total EPH and VPH*	**TPH 500**	**118**	**144**

1. Method 1 Direct Exposure Criteria and GA leachability criteria for TPH

Mg/kg – milligrams per kilogram

ND – not detected, laboratory reporting limits vary

ND<0.2 – not detected, laboratory reporting limit shown

NA – not applicable as detections will be totaled and compared to the Method 1 Direct Exposure Criteria for TPH

*Total EPH and VPH results are the conservative sum of petroleum fractions using the unadjusted fractions, where applicable, to account for the target compounds in the total for comparison to TPH.

Exceeds applicable comparison criteria.

3. FINDINGS, OPINION, AND RECOMMENDATIONS

Credere has completed the assessment of the removal of a 1,500-gallon UST of presumed No. 2 fuel oil at the Site in accordance with RIDEM Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials and the RIDEM UST Closure Assessment Guidelines.

3.1 FINDINGS AND OPINIONS

Our conclusions based on the findings of this work are presented below:

- The 1,500-gallon UST was in good condition upon removal with no holes or other damage observed. No evidence of a release of petroleum to the environment was observed from the UST or associated piping.
- Field screening with a PID did not identify any areas that appeared to have been impacted by a release of petroleum, all PID readings were no higher than 0.322 ppm_v. No other evidence (visual or olfactory) of a release was observed.
- Confirmatory soil sample laboratory analytical results indicated total VPH and EPH petroleum fraction results were below the applicable GA leachability criteria for TPH. However, several PAH target compounds exceed the Direct Contact Exposure criteria. This UST was previously believed to have been the source of contamination identified in a nearby boring/well 12SB3/12OBMW1; however, results of this closure assessment do not suggest the tank leaked. Therefore, there appears to be another source of the contamination identified in this boring/well location, which is now suspected to be the boiler room. Further assessment of the source and nature and extent of a possible release from the boiler room will be completed as part of ongoing Remedial Investigation activities. PAHs identified in the UST excavation will also be further evaluated as part of the overall risk assessment in the Remedial Investigation and are not believed to be associated specifically with the UST system.

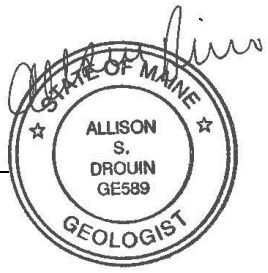
3.2 RECOMMENDATIONS

Based on the observed conditions and sample results and need for further investigation in the vicinity, it is Credere's opinion that no further action is warranted with regard to the UST removed from the Site. Credere has no recommendations for additional assessment or cleanup specific to this UST at this time.

4. CERTIFICATIONS

I certify as a registered profession/certified geologist that I have supervised the preparation of this report and the information provided herein is accurate and represents my professional judgement.

Allison Drouin, PG, CG
Geologist



I certify as the facility owner/operator representative that the information herein is complete and accurate.

PATTON.ERIK.MARK.1157550116 Digitally signed by PATTON.ERIK.MARK.1157550116 Date: 2019.04.12 11:27:30 -04'00'

Erik Patton, CPT
USACE

5. LIMITATIONS

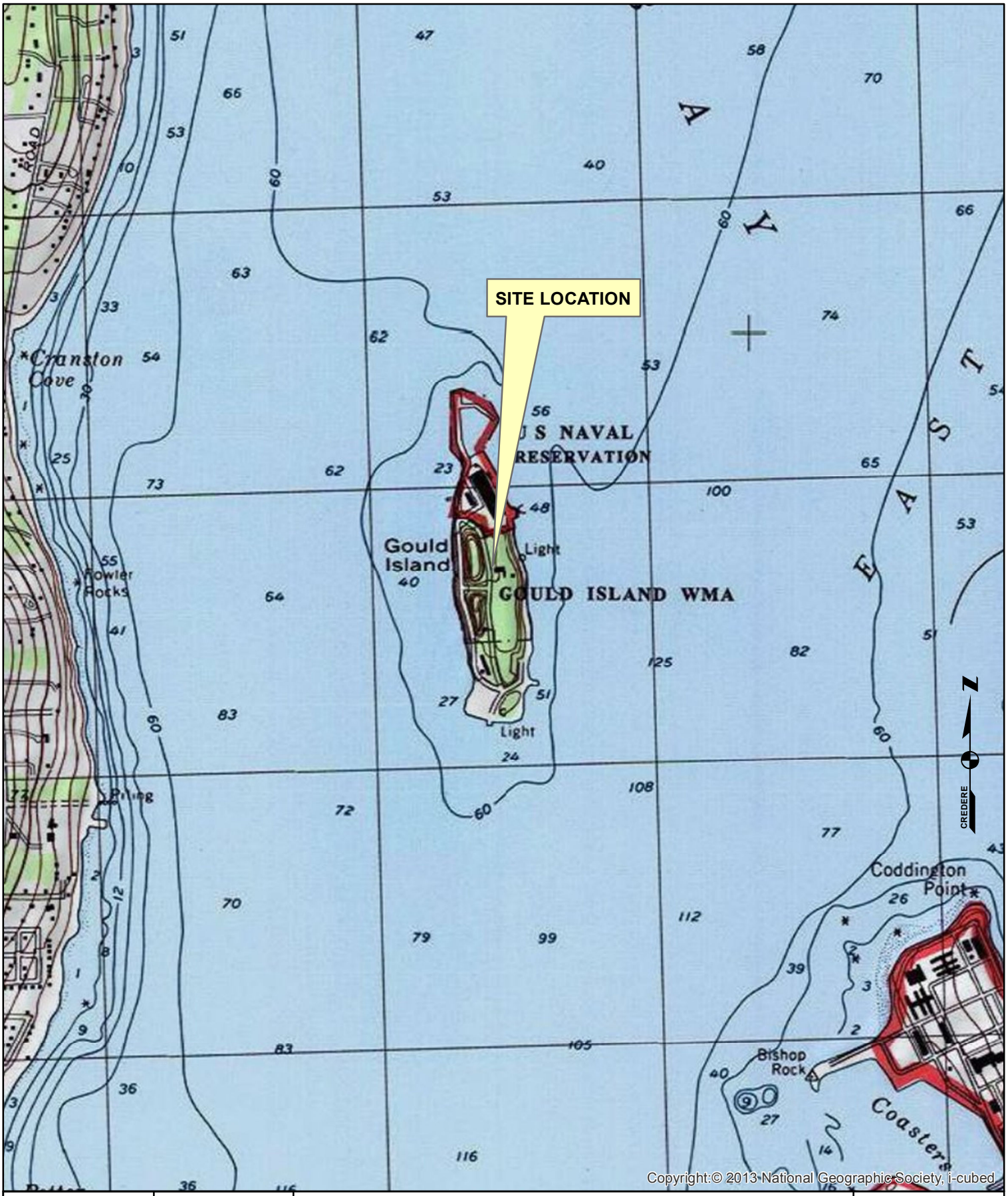
This report has been prepared for RIDEM on behalf of USACE.

This report does not reflect:

1. Conditions in untested areas of the Site.
2. Variations in chemical concentrations that can occur between sample locations.
3. The total understanding of potential influences of off-Site areas or historical uses that may have contributed or currently contribute to Site contamination, particularly relating to groundwater and subsurface soil conditions. The limited evaluation of off-Site contamination sources was based on available data and records.
4. The potential presence of compound sources was based on available data and records.
5. The potential presence of analytes that were not analyzed for or that may be present below minimum Practical Quantification Limits for the methods tested.
6. The conditions of groundwater and/or surface water beyond available data.
7. Variation in Site conditions that occurred at the time other than that the Site inspection was completed.

In the event that any conditions different from those described herein are encountered at a later time, Credere Associates, LLC requests an opportunity to review such differences and modify the assessment and conclusions of this report. This report was prepared expressly for the purpose described. The information in this report may not be suitable for any other use without adaptation for the specific purpose intended. Any such reuse of this report, without adaptation, shall be at the sole risk and liability of the party undertaking the reuse.

FIGURES



DRAWN BY: **MAK**	DATE: **7/13/2017**
CHECKED BY: **SWM**	PROJECT: **16001327**

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FIGURE 1
SITE LOCATION PLAN

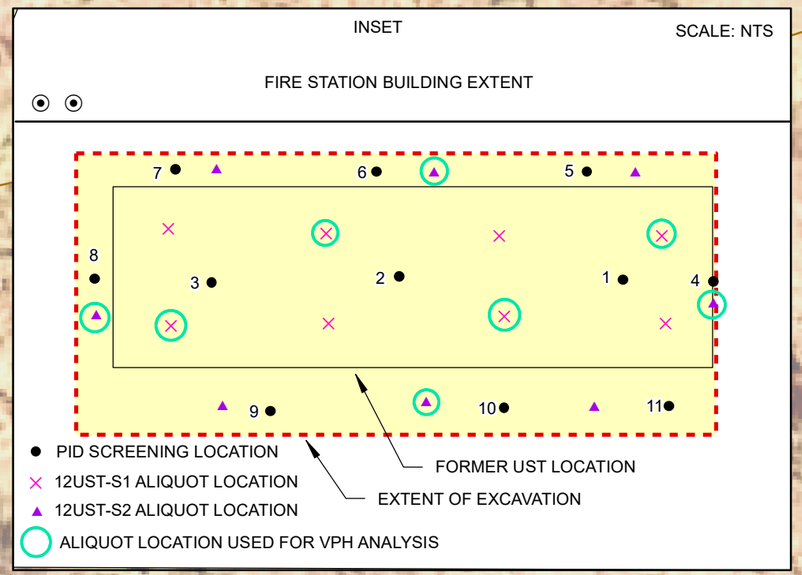
GOULD ISLAND
NARRAGANSETT BAY
JAMESTOWN, RHODE ISLAND

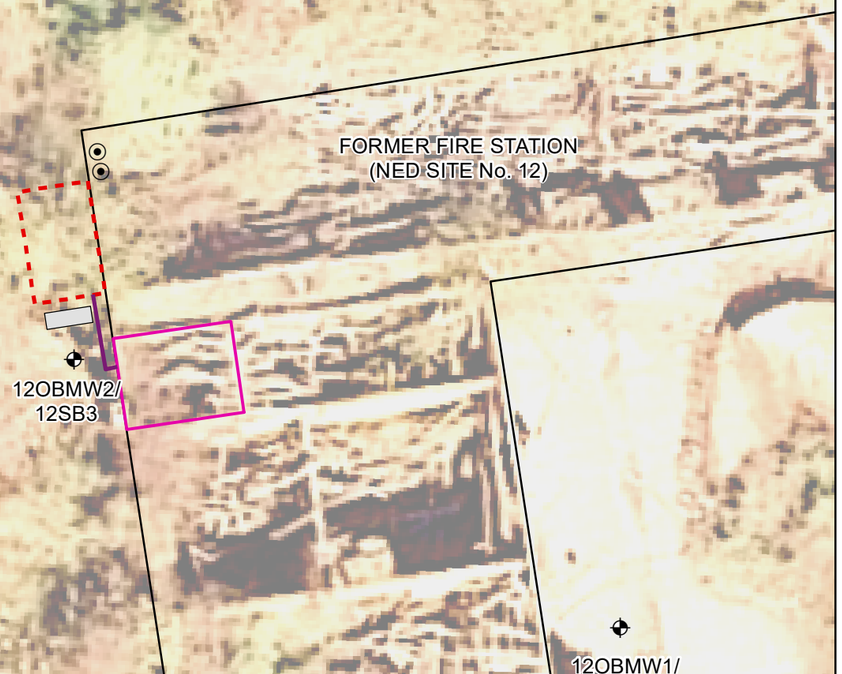
1,000 0 2,000 Feet

1 INCH = 2,000 FEET

T:\Data\NH\Town\Franklin\14001247-Ferrari Mill

FIELD SCREENING RESULTS		
LOCATION	**SOIL SAMPLE ID**	**PID FIELD SCREENING RESULT (PPMv)**
BASE	1	0.205
	2	0.192
	3	0.064
WEST SIDEWALL	4	0.246
SOUTH SIDEWALL	5	0.322
	6	0.165
	7	0.170
EAST SIDEWALL	8	0.032
NORTH SIDEWALL	9	0.116
	10	0.128
	11	0.288





CREDERE

40 20 0 40 Feet

1 INCH = 20 FEET

DRAWN BY: **SAF** | DATE: **04/05/2019**

CHECKED BY: **ASD** | PROJECT: **19001488**

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FIGURE 2
UST CLOSURE ASSESSMENT PLAN

GOULD ISLAND
NARRAGANSETT BAY
JAMESTOWN, RHODE ISLAND

- 5 FOOT TOPOGRAPHIC CONTOUR LINE
- HISTORICAL EDGE OF ROADWAY
- PIPING
- VENT PIPE
- SOIL BORING/OVERBURDEN MONITORING WELL LOCATION
- UST EXCAVATION AREA
- FORMER BOILER ROOM
- CONCRETE STEAM PIPE TRENCH
- BUILDING FOOTPRINT

NOTES:
EXISTING CONDITIONS FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON INFORMATION OBTAINED FROM 2014 USDA NAIP DIGITAL TRUE COLOR ORTHOPHOTOGRAPHY, US COAST GUARD, ENGINEERING EVALUATION OF CONTAMINATION FORMER NAVY TORPEDO TESTING FACILITY BY STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES. AND FIELD WORK COMPLETED MARCH 13, 2019.

Document Path: T:\Data\RI\Town\Jamestown\16001327 - Gould Island\MDX\UST_Figure 2.mxd

APPENDIX A

SITE PHOTOGRAPHS

Appendix A – Photo Log
Gould Island Fire Station (NED Site No. 12)
Narragansett Bay, Jamestown, Rhode Island

1. View of UST being uncovered by NRC on February 20, 2019.

2. View of uncovered north side of the UST on February 20, 2019.

Appendix A – Photo Log
Gould Island Fire Station (NED Site No. 12)
Narragansett Bay, Jamestown, Rhode Island

3. View of tank contents being pumped from the tank on March 11, 2019.

4. View of NRC personnel prepping to clean the tank on March 11, 2019.

Appendix A – Photo Log
Gould Island Fire Station (NED Site No. 12)
Narragansett Bay, Jamestown, Rhode Island

5. View of EnviroVantage unearthing tank on March 13, 2019.

6. View of tank grave with no evidence of a petroleum release on March 13, 2019.

Appendix A – Photo Log
Gould Island Fire Station (NED Site No. 12)
Narragansett Bay, Jamestown, Rhode Island

7. View of bottom of tank with no evidense of corrosion or holes.

APPENDIX B

PERMENET CLOSURE APPLICATION

Rhode Island Department of Environmental Management
Office of Waste Management

Permanent Closure Application for Underground Storage Tanks (USTs)

For DEM use Only
Approved: _____
Date Scheduled: _____
Total $ Received: _____
Date Received: _____
Check #: _____
Received By: _____

I. Facility Information

Application Date: 2/1/2019

Facility Name: Gould Island - Fire Station (NED Site No. 12)

Facility Address: Narragansett Bay City: Jamestown Zip: 02835

⚠ Facility Address must match what is recorded with the City or Town's Tax Assessor's Office

DEM UST Facility ID #: TBD DEM LUST Facility ID #: Plat Map# 4 Lot# OS-1 & OS-

Facility Contact: Erik Patton, CPT, U.S. Army Corps of Engineers Title: Project Manager

Phone # 978-318-8051 E-mail: erik.m.patton.cpt@usace.army.mil

Facility Type: ◯ Gas Station ◯ Residential (1, 2 or 3 Family) ◯ Residential (> 3 Family) ◯ Commercial/Industrial ◉ Local/State/Federal Government

II. Tank Owner Information

Name: State of Rhode Island Title:

Address: 235 Promenade St City: Providence State: RI Zip Code: 02908

Phone #: E-Mail:

III. Property Owner Information

☒ Same as Tank Owner ☐ Same as Facility

Owner Name: Title:

Address: City: State: Zip Code:

Phone #: E-Mail:

IV. Firm/Contractor To Perform Closure

Name of Firm/Contractor: NRC

Primary Contact: Galyn Robinson Title: Project Manager

Phone #: 207-523-4221 E-Mail: grobinson@nrcc.com

Mailing Address: 31 Waldron Way City: Portland State: ME Zip Code: 04103

Who is the primary point of contact for this closure?
☐ Tank Owner as listed in Section II ☐ Property Owner as listed in Section III ☐ Other (specify)
☐ Firm/Contractor Listed in Section IV ☒ Environmental Consultant Listed in Section V

Why is this UST system being permanently closed? Abandoned

V. Firm/Consultant To Perform Closure Assessment

Is a Closure Assessment Required for this UST Closure? (See Rule 13.0) ○ Yes ◉ No ⚠ If Yes, Section V must be completed

If no, do you choose to obtain one? ◉ Yes ○ No

Name of Firm Conducting Assessment: Credere Associates, LLC

Name of Consultant: Allison Drouin Title: Geologist

Phone #: 207-828-1272 x 15 E-Mail: adrouin@crederellc.com

Mailing Address: 776 Main Street City: Westbrook State: ME Zip Code: 04092

Qualifications:

◉ Professional Engineer (PE) License	Licensing State:		License #:	
◉ Certified Professional Geologist	Licensing State:	Maine	License #:	GE589
◉ Registered Professional Geologist	Licensing State:	New Hampshire	License #:	863

VI. Fees

	Number of Tanks	Fee per Tank	Total
Closure Fee	1	x $75.00	$75
Registration Fee*	1	x $75.00	$75

Fee not included as it is owned by RI.

Total Amount Due: $150

ⓘ * Registration fee is not required for residential (1, 2 or 3 family) heating oil tanks <1,100 gallons, farm tanks storing fuel for heating purposes, government agencies, and non-profit fire districts. For all other tanks, a registration fee is required with this application unless the tank is already registered with the UST program and annual registration payments are up to date.

VII. Description of UST(s) and Product Piping to be Closed:

What is being removed in this closure? ○ UST(s) Only ○ Product Pipeline Only ◉ UST(s) and Product Pipeline

USTs to be Removed

UST #	Installation Date	Date Last Used	Volume	Construction Material	Construction Type	Stored Material
1	Unknown	Unknown	1,000	Steel	Single-Walled	Heating Fuel

Piping to be Removed

Piping System #	Piping System Type	Installation Date	Construction Material	Construction Type	Included in Closure?
1	Product Piping	Unknown	Steel	Single-Walled	◉ Yes ○ No
2					○ Yes ○ No
3					○ Yes ○ No

Will any product or vapor pipelines remain on the property after this closure? ○ Yes ◉ No

VIII. Site Figure

See attached

Scale: 1" = ___ ft

Include location of ALL USTs and piping, including those not being removed. Clearly label all tanks with UST # and approximate size. Include dispensers, canopies, nearby structures, utilities, and other pertinent features or obstacles.

IX. Closure Type

(●) Standard Removal
( ) Closure in Place

ⓘ If a Standard Removal (i.e., tank is removed from the ground) is selected, skip the remaining questions in this section and continue to Section X. If Closure in Place has been selected, this section must be completed in full.

Requests for Closure in Place require the following supplemental documentation:

☐ A Request Letter clearly describing the conditions or obstructions present that support the request for a closure in place (e.g., excavation would damage a nearby foundation, etc.). Include a description of the subsurface sampling plan (if subsurface investigation is proposed).

☐ A Site Figure to scale showing tank location, obstructions and clearance distances. Include proposed subsurface sampling locations (if subsurface investigation is proposed).

☐ Photographs depicting the tank area and obstructions

Which method is proposed for required ancillary testing? ( ) Subsurface Investigation ( ) Tank and Line Tightness (heating oil tanks only)

ⓘ Requests for closure in place are handled on a case-by-case basis. Approval will not be granted where there is no readily apparent limitation to removal of the tank(s). Further, in cases where tank and line tightness results indicate that a system has failed, a subsurface investigation must be completed

X. Closure Information

Where will the Tank(s) be cleaned? (●) On-Site ( ) Off-Site (provide location):

Specify cleaning method: Removal of residual product and wipe to gas free state

What will happen to the tank(s)? (●) Rendered unfit for use and disposed ( ) Re-used (Must comply with Section 10.03 of UST regulations)

If unfit, provide name and address of disposal facility: Full Circle Metal Recycling. 23 Green Hill Road. Johnston, RI 02919

If tank(s) will be re-used, provide the name, address, and phone number of the individual to whom the re-used tank(s) will be registered:

Describe how the tank(s) will be emptied prior to excavation: Pumped to drums

Describe how the tank(s) will be removed from the excavation: By excavator

Describe how the tanks(s) will be properly and safely vented and openings made (if necessary): Monitored with LEL meter and blower

⚠ Appropriate venting must be carried out before any cutting and before off-site transport of any tank which has not been completely cleaned

Describe the instruments used to verify that the tank(s) has been properly vented: LEL/O2 meter

Describe how residues remaining in the tank(s) will be managed: Containerized and disposed at NRC facility in South Portland, ME

Has the tank(s) ever held a non-petroleum hazardous material?: ( ) Yes (●) No

If Yes, Specify:

Has the tank(s) ever held a material other than that specified in Section VII? ○ Yes ◉ No

If Yes, Specify:

Upon completion of this closure, how many UST(s) will be present at the property? 0

Will any new UST(s) be installed at this site? ○ Yes ◉ No

ⓘ Installation of new UST(s), piping, or other components require a separate application and approval process! Contact us at (401) 222-2797 for more information.

Are there any Letters of Non-Compliance (LNC) or Notices of Violation (NOV) active for this site? ○ Yes ◉ No

XI. Waste Disposal

How will sludges and wastes generated during the cleaning process be disposed of? Drumed liquid waste will be disposed of at NRC in South Portland, Maine

⚠ Firms transporting tank sludge and waste or tank(s) that require further cleaning must be permitted by DEM, Division of Waste Management, RCRA Section, as Hazardous Waste Transporters.

Name of Waste Hauler: NRC DEM Permit #: MAC300098399

Street Address: 31 Waldron Way City: Portland State: ME

XII. Notification of Local Fire Department(s)

The authorized signature of the local fire department below indicates that the local fire officials have been notified that you are planning to close an underground storage tank(s) at the above location. You must also notify the local fire department of the scheduled closure date after you have confirmed this date with DEM.

Name of Fire Department: Jamestown Fire Department Phone #: 401-423-0062

Printed Name of Official: JAMES R. BEYER Title: CHIEF

Signature: Date: 2.5.19

⚠ The local fire department must be informed of, and give prior approval to, any cutting of UST(s)

ⓘ Additional notifications and approvals may be required in some jurisdictions. It is highly recommended that applicants check with the local town/city government to determine if any additional notifications or approvals are required.

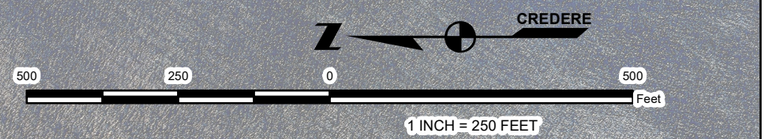
XIII. Certification By Tank Owner

⚠ This application MUST be signed by the registered UST or Facility OWNER only. If the registered owner is unable to sign legal documents, you must provide legally binding documentation which clearly gives permission for the undersigned to represent the owner.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that records pertaining to the closure will be kept on file by me indicating final destination of residues, etc. I have contacted my local fire department, town or city government, and utilities and have obtained any necessary local permits or permissions, and fulfilled any requirements that may be necessary. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Please Print): CPT Erik M. Patton Owner Phone: 978-318-8051

Owner Signature: Date Signed: 14 Feb 2019



LEGEND

NED SITE NUMBER	LOCATION	NED SITE NAME
1	D-4	COAL STORAGE
2	B-5	MARINE BARRACKS (FOUNDATION REMAINING)
3	C-5	FORMER CARPENTERS SHOP
4	E-9	PUMP HOUSE
5	D-7	FORMER UNKNOWN BUILDING #2
6	E-10	UNKNOWN BUILDING #3
7	D-5	FORMER UNKNOWN BUILDING #4 (FOOTINGS REMAINING)
8	E-7	INCINERATOR
9	D-6	MAGAZINE IGNITOR STORAGE
10	E-8	DISPOSAL AREA #14
11	C-6	FORMER QUONSET HUTS/MAINTENACE SHOPS
12	C-7	MAINTENANCE SHOPS/GARAGE/FIRE STATION
13	B-8	ELECTRIC SUBSTATION TRANSFOMER PEN
14	C-8	FORMER MARINE BARRACKS
15	B-9	FORMER RECREATION BUILDING
16	C-9	FORMER BARRACKS
17	C-9	FORMER TRANSFORMER VAULT
18	D-10	WATER TREATMENT PLANT
19	C-9	TORCH POT STORAGE
20	B-6	FORMER CABLE TERMINAL BUILDING
21	B-11	BUNKER #11
22	B-12	BUNKER #12
23	C-12	COAL STORAGE
24	B-12	CABLE TERMINAL BUILDING
25	B-12	UNDERGROUND STORAGE TANKS
26	C-13	GAS PUMP HOUSE/GAS TANKS (REMOVED)
27	C-13	TWO GAS PITS
28	C-13	FORMER ORDNANCE TEST FACILITY, HANGER
29	D-13	FORMER UNKNOWN BUILDING #1 (HANGAR 5496-61)
30	E-13	FORMER PYROTECHNIC STORAGE
31	E-13	GAS PIT
32	E-12	FORMER DRUM STORAGE AREA
33	D-12	FORMER PAINT AND OIL STORAGE
34	D-12	THEATER/RESEARCH BUILDING (FOUNDATION REMAINING, CONCRETE PLATFORM)
35	E-12	BOILER HOUSE
36	D-11	DEGAUSSING BUILDING
37	D-11	MISCELLANEOUS STORAGE
38	D-11/12	STORAGE
39	D-6	WELLHOUSE #81
40	C-9	WELLHOUSE #78
41	D-8	AA GUNS ELECTRICAL SUPPLY (UTILITY POLE REMAINING)
42	C-13	5,000 GALLON AVGAS TANK
43	D-13	FORMER PAINT SHED
44	C-14	EMPTY DRUMS
45	D-8	FORMER FIRE APPARATUS HOUSES (2)
46	D-7, D-8, E-7, E-8	FORMER AA GUN EMPLACEMENTS (4)
47	C-10	UNDERGROUND WATER TANK
48	D-6	DEBRIS STOCKPILE
N/A	C-13	FORMER BACKGROUND SAMPLE #1 LOCATION (BG-48SS-001)
N/A	D-7	FORMER BACKGROUND SAMPLE #2 LOCATION (BG-48SS-002)

DRAWN BY: **MAK** | DATE: **01/25/2019**
CHECKED BY: **SWM** | PROJECT: **16001327**

Credere Associates, LLC
776 MAIN STREET
WESTBROOK, MAINE
Tel. 207.828.1272
Fax 207.887.1051
WWW.CREDERELLC.COM

FIGURE 2
DETAILED SITE PLAN

GOULD ISLAND
NARRAGANSETT BAY
JAMESTOWN, RHODE ISLAND

- (10) NED SITE NUMBER
- PREVIOUS SEDIMENT SAMPLE LOCATION (STONE AND WEBSTER, 1997)
- PREVIOUS SOIL SAMPLE LOCATION (STONE AND WEBSTER, 1997)
- HISTORICAL EDGE OF ROADWAY
- HISTORICAL UNPAVED ROAD
- HISTORICAL RAIL LINE
- 5 FOOT TOPOGRAPHIC CONTOUR LINE
- WORK AREA
- EXCLUSION ZONE (EZ)
- CONTAMINATION REDUCTION ZONE (CRZ)
- SUPPORT ZONE (SZ)
- US NAVY OR COAST GUARD EASEMENTS / NON-FUDS ELIGIBLE
- HISTORICAL STRUCTURES
- DISPOSAL AREA
- APPROXIMATE PARCEL BOUNDARY

NOTES:
EXISTING CONDITIONS FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON INFORMATION OBTAINED FROM 2014 USDA NAIP DIGITAL TRUE COLOR ORTHOPHOTOGRAPHY, US COAST GUARD, ENGINEERING EVALUATION OF CONTAMINATION FORMER NAVY TORPEDO TESTING FACILITY BY STONE & WEBSTER ENVIRONMENTAL TECHNOLOGY & SERVICES.

Document Path: T:\Data\RI\Town\Jamestown\16001327 - Gould Island\Figure 2_demo_update.mxd

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

February 20, 2019

ERIK PATTON
U.S. ARMY CORPS OF ENGINEERS - NE DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742

RE: Underground Storage Tank Closure; Facility ID#4848
GOULD ISLAND FIRE STATION (NED SITE #12), , JAMESTOWN RI 02835

Dear ERIK PATTON:

The Office of Waste Management has reviewed the "Permanent Closure Application For Underground Storage Tank (s)" for the above-referenced property. The following UST(s) are approved to be closed on Thursday, February 21, 2019:

UST ID#	VOLUME	STORED MATERIAL	METHOD OF CLOSURE	ACTION REQUIRED
001	1000	Unknown	Remove from Ground	Closure Assessment Required

All USTs are to be removed and handled as described in the closure application. This approval letter along with a copy of the UST Closure Application must accompany the tank(s) during transit to the proper disposal facility.

IF ANY CONTAMINATION IS FOUND IN THE VICINITY OF OR AROUND THE SUBJECT UST(S), IMMEDIATE NOTIFICATION TO THIS OFFICE IS REQUIRED (401-222-2797).

This closure requires the submittal of a closure assessment report prepared by an environmental consultant with appropriate certifications within 30 days. The consultant must be present during all closure activities to properly conduct the closure assessment. Failure to have a consultant present as required by the UST regulations will result in cancellation and rescheduling of the closure. A closure certificate will not be issued until the above documentation has been received, reviewed, and approved by this inspector.

You or your representative must contact the DEM inspector, FRANK VOGEL, on the day of the UST closure to confirm the inspection time. The inspector can be reached at (401) 222-2797, extension 7522 (office number) or 401-473-6896 (field mobile phone).

Sincerely,

Kevin Gillen

Kevin Gillen, Supervising Engineer
UST Management Program
Office of Waste Management

cc: ALLISON DROUIN, CREDERE ASSOCIATES LLC
GAYLN ROBINSON, NRC

APPENDIX C

WASTE DISPOSAL MANIFESTS

3-142 148

NON HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. RIDSSSSSSSSSS79108 — Manifest Document No. — 2. Page 1 of 1

3. Generator's Name and Mailing Address
US Army Corp. of Engineers
696 Virginia Avenue
Concord MA 01742
Attn: Erik Patton, CPT
4. Generator's Phone (978) 318-8051

A. Non-Hazardous Manifest Document Number: NHZ001 80477
B. S.G.I. (Gen. Site Address): Narragansett Bay/Gould Island Jamestown RI
C. S.T.I. (Lic. Plate #)
D. Transporter's Phone: 978-485-1595

5. Transporter 1 Company Name: NRC East Environmental Services, Inc.
6. US EPA ID Number: MAC300098399
7. Transporter 2 Company Name
8. US EPA ID Number
E. S.T.I. (Lic. Plate #)
F. Transporter's Phone

9. Designated Facility Name and Site Address
ENPRO SERVICES OF MAINE, INC.
106 MAIN STREET
SOUTH PORTLAND ME 04106
10. US EPA ID Number: MED019051069
G. State Facility's ID: SAME
H. Facility's Phone: 207-799-0850

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-RCRA, non-DOT Regulated Material (oily water/sediment)	5	DM	250	G	State NONE
					State NONE
b. Non-RCRA, non-DOT Regulated Material (oily water/sediment)	3	DM	150	G	State NONE
					State NONE
c.					State
					State
d.					State
					State

J. Additional Descriptions for Materials Listed Above
a. (L) tank cleaning drums x55g (Gould-001) ME-0319-13104
b. (L) IDW drums x55g (Gould-002) ME-0319-13105
c.
d.

K. Handling Codes for Wastes Listed Above

	Interim	Final
a.	H135/H141	
b.	H135	
c.		
d.		

15. Special Handling Instructions and Additional Information
(Credere)
Point of Departure: NRC JOB# 134588

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable state laws and regulations.

Printed/Typed Name: SEAN MCNAMARA (CREDERE) — Signature — Month 03 Day 25 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Chris Childs — Signature — Date: Month 03 Day 25 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: DAVID HART — Signature — Date: Month 03 Day 25 Year 19

ORIGINAL-RETURN TO GENERATOR

ALLIED RECYCLING CENTER, INC.

1901 Main Street
Walpole, MA 02081

☎ (508) 668-8699 • FAX (508) 668-9668

Purchase Ticket

Purchase Ticket #	**23087**
Purchase Date	**03/27/19**
Currency	**US Dollar**

Customer:

NRC Environmental
19 National Drive
Franklin, MA 02038

Terms	7 Days Net
Payment Due	3/27/19

Item Name	Order #	Gross	Tare	Net	Price	Total
Rec: **3/27/19**	WT Ticket #**S 49819**					
Steel Storage Tanks		40,860.00	36,740.00	4,120.00 LB	170.00 GT	$312.68
	Totals:	40,860.00	36,740.00	4,120.00		**$312.68**

Job# 134588

WE WANT YOUR SCRAP!
THANK YOU FOR THE BUSINESS!

Payment Information

Date	Check / Ref	Check	Cash /EFT	Total Appld
03/27/19	0	$0.00	$312.68	$312.68

RECEIVED BY: _____

Prepared By Molly

3/27/2019 3:14:17PM

APPENDIX D

LABORATORY ANALYTICAL REPORT

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Sean McNamara
CREDERE Associates
776 Main Street
Westbrook, ME 04092

PO Number: 19001488
Job ID: 47808
Date Received: 3/13/19

Project: Gould Island Demo 19001488

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Jennifer Lowe
Laboratory Manager

Date of Approval: 3/21/2019
Total number of pages: 14

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH903		

Project ID: Gould Island Demo 19001488

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
12UST-S1	Solid	3/13/2019 10:55	47808-001	
				EPH in solids by MADEP Method
				VPH in solids by MA DEP Method
12UST-S2	Solid	3/13/2019 10:50	47808-002	
				EPH in solids by MADEP Method
				VPH in solids by MA DEP Method
Trip Blank	Solid	3/13/2019 0:00	47808-003	
				VPH in solids by MA DEP Method

Project ID: Gould Island Demo 19001488
Job ID: 47808

Sample#: 47808-001
Sample ID: 12UST-S1
Matrix: Solid Percent Dry: 87.6% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.55 mL MeOH/g soil.
Received on ice at 6˚C, in satisfactory condition.
Sampled: 3/13/19 10:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
Unadjusted C9-C12 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
benzene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
toluene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
o-xylene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
naphthalene	< 0.2	0.2	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
C5-C8 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
C9-C12 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
C9-C10 Aromatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**94**	70-130	%	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**96**	70-130	%	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH
a,a,a-trifluorotoluene SUR	**100**	70-130	%	1	LMM	3/14/19	11494	3/14/19	14:29	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Absolute Resource associates

Project ID: Gould Island Demo 19001488
Job ID: 47808

Sample#: 47808-002
Sample ID: 12UST-S2
Matrix: Solid Percent Dry: 86.3% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.61 mL MeOH/g soil.
Received on ice at 6˚C, in satisfactory condition.
Sampled: 3/13/19 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
Unadjusted C9-C12 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
benzene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
toluene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
o-xylene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
naphthalene	< 0.2	0.2	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
C5-C8 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
C9-C12 Aliphatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
C9-C10 Aromatics	< 4	4	ug/g	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**113**	70-130	%	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**113**	70-130	%	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH
a,a,a-trifluorotoluene SUR	**99**	70-130	%	1	LMM	3/14/19	11494	3/14/19	14:59	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Gould Island Demo 19001488
Job ID: 47808

Sample#: 47808-003
Sample ID: Trip Blank
Matrix: Solid
Samples prepared in methanol within a 1:1 ratio +/- 25% mL MeOH/g soil
Received on ice at 6˚C, in satisfactory condition.
Sampled: 3/13/19 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 5	5	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
Unadjusted C9-C12 Aliphatics	< 5	5	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
methyl t-butyl ether (MTBE)	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
benzene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
toluene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
ethylbenzene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
m&p-xylenes	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
o-xylene	< 0.1	0.1	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
naphthalene	< 0.2	0.2	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
C5-C8 Aliphatics	< 5	5	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
C9-C12 Aliphatics	< 5	5	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
C9-C10 Aromatics	< 5	5	ug/g	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**96**	70-130	%	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**96**	70-130	%	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH
a,a,a-trifluorotoluene SUR	**87**	70-130	%	1	LMM	3/14/19	11494	3/14/19	13:59	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Gould Island Demo 19001488
Job ID: 47808
Sample#: 47808-001
Sample ID: 12UST-S1
Matrix: Solid Percent Dry: 87.6% Results expressed on a dry weight basis.
Sampled: 3/13/19 10:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
phenanthrene	**2.1**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
anthracene	**0.4**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
fluoranthene	**3.4**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
pyrene	**3.0**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
benzo(a)anthracene	**1.4**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
chrysene	**1.4**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
benzo(b)fluoranthene	**1.4**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
benzo(k)fluoranthene	**1.3**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
benzo(a)pyrene	**1.5**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
indeno(1,2,3-cd)pyrene	**0.8**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
dibenzo(a,h)anthracene	**0.3**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
benzo(g,h,i)perylene	**0.9**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	11:30	MA EPH
Unadjusted C11-C22 Aromatics	**58**	22	ug/g	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
C19-C36 Aliphatics	**26**	22	ug/g	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
C11-C22 Aromatics	**39**	22	ug/g	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**49**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
o-terphenyl SUR	**57**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
2-fluorobiphenyl SUR	**93**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH
2-bromonaphthalene SUR	**96**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:14	MA EPH

Project ID: Gould Island Demo 19001488
Job ID: 47808
Sample#: 47808-002
Sample ID: 12UST-S2
Matrix: Solid Percent Dry: 86.3% Results expressed on a dry weight basis.
Sampled: 3/13/19 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
2-methylnaphthalene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
phenanthrene	**1.7**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
acenaphthene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
acenaphthylene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
fluorene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
anthracene	**0.4**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
fluoranthene	**2.5**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
pyrene	**1.8**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
benzo(a)anthracene	**1.0**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
chrysene	**1.0**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
benzo(b)fluoranthene	**1.0**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
benzo(k)fluoranthene	**1.0**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
benzo(a)pyrene	**1.1**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
indeno(1,2,3-cd)pyrene	**0.6**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
dibenzo(a,h)anthracene	< 0.2	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
benzo(g,h,i)perylene	**0.6**	0.2	ug/g	1	CL	3/15/19	11502	3/21/19	12:00	MA EPH
Unadjusted C11-C22 Aromatics	**66**	23	ug/g	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
C9-C18 Aliphatics	< 23	23	ug/g	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
C19-C36 Aliphatics	**43**	23	ug/g	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
C11-C22 Aromatics	**53**	23	ug/g	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**48**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
o-terphenyl SUR	**58**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
2-fluorobiphenyl SUR	**99**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH
2-bromonaphthalene SUR	**101**	40-140	%	1	AAG	3/15/19	11502	3/21/19	12:46	MA EPH

Quality Control Report

124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

Case Narrative
Lab # 47808

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, at 6 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.

Calibration

No exceptions noted.

Method Blank

No exceptions noted.

Surrogate Recoveries

No exceptions noted.

Laboratory Control Sample Results

No exceptions noted.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Not requested for this project.

Other

VPH: The trap used for VPH analysis is a Tekmar STRATUM Purge Trap 9. The column used for VPH analysis is a Restek Rtx-502.2, 105m, 0.53mmID, and 3um df.
Reporting Limits: Dilutions performed during the analysis are noted on the result pages.

No other exceptions noted.

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

- QC Report -

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA VPH	MB11494	Unadjusted C5-C8 Aliphatics		<	5	ug/g						
		Unadjusted C9-C12 Aliphatics		<	5	ug/g						
		methyl t-butyl ether (MTBE)		<	0.1	ug/g						
		benzene		<	0.1	ug/g						
		toluene		<	0.1	ug/g						
		ethylbenzene		<	0.1	ug/g						
		m&p-xylenes		<	0.1	ug/g						
		o-xylene		<	0.1	ug/g						
		naphthalene		<	0.2	ug/g						
		C5-C8 Aliphatics		<	5	ug/g						
		C9-C12 Aliphatics		<	5	ug/g						
		C9-C10 Aromatics		<	5	ug/g						
		2,5-dibromotoluene as Aromatic SUR			110	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			115	%			70	130		
		a,a,a-trifluorotoluene SUR			82	%			70	130		
MA VPH	MLCS11494	Unadjusted C5-C8 Aliphatics			34.7	ug/g	30	116	70	130		
		Unadjusted C9-C12 Aliphatics			44.5	ug/g	40	111	70	130		
		methyl t-butyl ether (MTBE)			4.8	ug/g	5	97	70	130		
		benzene			5.1	ug/g	5	101	70	130		
		toluene			4.9	ug/g	5	98	70	130		
		ethylbenzene			4.9	ug/g	5	99	70	130		
		m&p-xylenes			9.9	ug/g	10	99	70	130		
		o-xylene			4.9	ug/g	5	99	70	130		
		naphthalene			5.0	ug/g	5	101	70	130		
		C5-C8 Aliphatics			15	ug/g	15	100	70	130		
		C9-C12 Aliphatics			13	ug/g	15	88	70	130		
		C9-C10 Aromatics			5.2	ug/g	5	103	70	130		
		2,5-dibromotoluene as Aromatic SUR			120	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			116	%			70	130		
		a,a,a-trifluorotoluene SUR			104	%			70	130		
MA VPH	MLCSD11494	Unadjusted C5-C8 Aliphatics			34.2	ug/g	30	114	70	130	1	25
		Unadjusted C9-C12 Aliphatics			43.9	ug/g	40	110	70	130	1	25
		methyl t-butyl ether (MTBE)			4.8	ug/g	5	96	70	130	1	25
		benzene			5.0	ug/g	5	100	70	130	1	25
		toluene			4.9	ug/g	5	98	70	130	1	25
		ethylbenzene			4.9	ug/g	5	98	70	130	1	25
		m&p-xylenes			9.9	ug/g	10	99	70	130	0	25
		o-xylene			4.9	ug/g	5	97	70	130	1	25
		naphthalene			5.0	ug/g	5	101	70	130	0	25
		C5-C8 Aliphatics			15	ug/g	15	100	70	130	1	25
		C9-C12 Aliphatics			13	ug/g	15	86	70	130	2	25
		C9-C10 Aromatics			5.1	ug/g	5	102	70	130	1	25
		2,5-dibromotoluene as Aromatic SUR			108	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			104	%			70	130		
		a,a,a-trifluorotoluene SUR			94	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	BLK11502	naphthalene		<	0.2	ug/g						
		2-methylnaphthalene		<	0.2	ug/g						
		phenanthrene		<	0.2	ug/g						
		acenaphthene		<	0.2	ug/g						
		acenaphthylene		<	0.2	ug/g						
		fluorene		<	0.2	ug/g						
		anthracene		<	0.2	ug/g						
		fluoranthene		<	0.2	ug/g						
		pyrene		<	0.2	ug/g						
		benzo(a)anthracene		<	0.2	ug/g						
		chrysene		<	0.2	ug/g						
		benzo(b)fluoranthene		<	0.2	ug/g						
		benzo(k)fluoranthene		<	0.2	ug/g						
		benzo(a)pyrene		<	0.2	ug/g						
		indeno(1,2,3-cd)pyrene		<	0.2	ug/g						
		dibenzo(a,h)anthracene		<	0.2	ug/g						
		benzo(g,h,i)perylene		<	0.2	ug/g						
		Unadjusted C11-C22 Aromatics		<	20	ug/g						
		C9-C18 Aliphatics		<	20	ug/g						
		C19-C36 Aliphatics		<	20	ug/g						
		C11-C22 Aromatics		<	20	ug/g						
		1-chloro-octadecane SUR			58	%			40	140		
		o-terphenyl SUR			73	%			40	140		
		2-fluorobiphenyl SUR			94	%			40	140		
		2-bromonaphthalene SUR			95	%			40	140		
MA EPH	LCS11502	naphthalene			2.7	ug/g	6	46	40	140		
		2-methylnaphthalene			3.0	ug/g	6	51	40	140		
		phenanthrene			3.8	ug/g	6	63	40	140		
		acenaphthene			3.2	ug/g	6	53	40	140		
		acenaphthylene			3.1	ug/g	6	51	40	140		
		fluorene			3.4	ug/g	6	57	40	140		
		anthracene			3.8	ug/g	6	63	40	140		
		fluoranthene			4.0	ug/g	6	67	40	140		
		pyrene			4.2	ug/g	6	70	40	140		
		benzo(a)anthracene			4.2	ug/g	6	70	40	140		
		chrysene			4.1	ug/g	6	69	40	140		
		benzo(b)fluoranthene			4.1	ug/g	6	69	40	140		
		benzo(k)fluoranthene			4.4	ug/g	6	73	40	140		
		benzo(a)pyrene			4.2	ug/g	6	70	40	140		
		indeno(1,2,3-cd)pyrene			4.4	ug/g	6	73	40	140		
		dibenzo(a,h)anthracene			4.5	ug/g	6	75	40	140		
		benzo(g,h,i)perylene			4.4	ug/g	6	73	40	140		
		Unadjusted C11-C22 Aromatics			77	ug/g	102	76	40	140		
		C9-C18 Aliphatics		<	20	ug/g	36	44	40	140		
		C19-C36 Aliphatics			36	ug/g	48	76	40	140		
		1-chloro-octadecane SUR			56	%			40	140		
		o-terphenyl SUR			69	%			40	140		
		2-fluorobiphenyl SUR			88	%			40	140		
		2-bromonaphthalene SUR			91	%			40	140		
		C11-C22 Aromatics										

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCSD11502	naphthalene			3.0	ug/g	6	51	40	140	10	25
		2-methylnaphthalene			3.4	ug/g	6	57	40	140	12	25
		phenanthrene			3.9	ug/g	6	65	40	140	3	25
		acenaphthene			3.4	ug/g	6	57	40	140	8	25
		acenaphthylene			3.4	ug/g	6	57	40	140	10	25
		fluorene			3.7	ug/g	6	61	40	140	7	25
		anthracene			3.9	ug/g	6	65	40	140	3	25
		fluoranthene			4.3	ug/g	6	72	40	140	8	25
		pyrene			4.3	ug/g	6	72	40	140	3	25
		benzo(a)anthracene			4.3	ug/g	6	71	40	140	1	25
		chrysene			4.2	ug/g	6	69	40	140	0	25
		benzo(b)fluoranthene			4.7	ug/g	6	78	40	140	12	25
		benzo(k)fluoranthene			4.2	ug/g	6	69	40	140	5	25
		benzo(a)pyrene			4.3	ug/g	6	72	40	140	2	25
		indeno(1,2,3-cd)pyrene			4.1	ug/g	6	69	40	140	6	25
		dibenzo(a,h)anthracene			4.3	ug/g	6	72	40	140	4	25
		benzo(g,h,i)perylene			4.0	ug/g	6	67	40	140	8	25
		Unadjusted C11-C22 Aromatics			74	ug/g	102	73	40	140	4	25
		C9-C18 Aliphatics		<	20	ug/g	36	42	40	140	4	25
		C19-C36 Aliphatics			35	ug/g	48	73	40	140	3	25
		1-chloro-octadecane SUR			53	%			40	140		
		o-terphenyl SUR			65	%			40	140		
		2-fluorobiphenyl SUR			96	%			40	140		
		2-bromonaphthalene SUR			97	%			40	140		
		C11-C22 Aromatics										

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

47808

Company Name: Credere Associates, LLC
Company Address: 776 main St., Westbrook, ME 04092
Report To: Sean McNamara
Phone #: 207 828 1272
Invoice to: Sean McNamara
Email: smcnamara@crederellc.com
PO #: 19001488

Project Name: Gould Island Demo
Project #: 19001488
Project Location: NH MA ME VT RI
Accreditation Required? N/Y:
Protocol: RCRA SDWA NPDES MCP NHDES DOD
Reporting Limits: QAPP GW-1 S-1 EPA DW Other
Quote #
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER	Grab (G) or Composite (C)
47808-01	12UST-S1	2		X						X	3/13/2019	1055	SAF	C
-02	12UST-S2	2		X						X	3/13/2019	1052	SAF	C
-03	Trip Blank													

☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624.1 ☐ VOC BTEX MBE, only ☐ VOC 8021VT
☒ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gasses-List:
☐ TPH ☐ DRO 8015 ☒ EPH MADEP ☐ TPH Fingerprint
☐ 8270PAH ☐ 8270ABN ☐ 625.1 ☐ EDB
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608.3 Pest/PCB
☐ O&G 1664 ☐ Mineral O&G 1664
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness
☐ Total Metals-list:
☐ Dissolved Metals-list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TOC ☐ TON ☐ Ferrous Iron
☐ T-Phosphorus ☐ Bacteria P/A ☐ Bacteria MPN ☐ Enterococci
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Phenols
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ Grain Size ☐ Herbicides ☐ Asbestos ☐ PFAS

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐
(10 Business Days)
*Date Needed 72 hrs

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
TAT 72 hrs Date needed 3/18/2019

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) smcnamara@crederellc.com
☐ HARD COPY REQUIRED ☐ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE °C

CUSTODY RECORD
QSD-01 Revision 11/08/18

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
	Samantha Booth			John McNamara	3/13/19	15:30
	Relinquished by:	3/13/19	16:50	Received by:	Date	Time
	Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
					3/13/19	1650