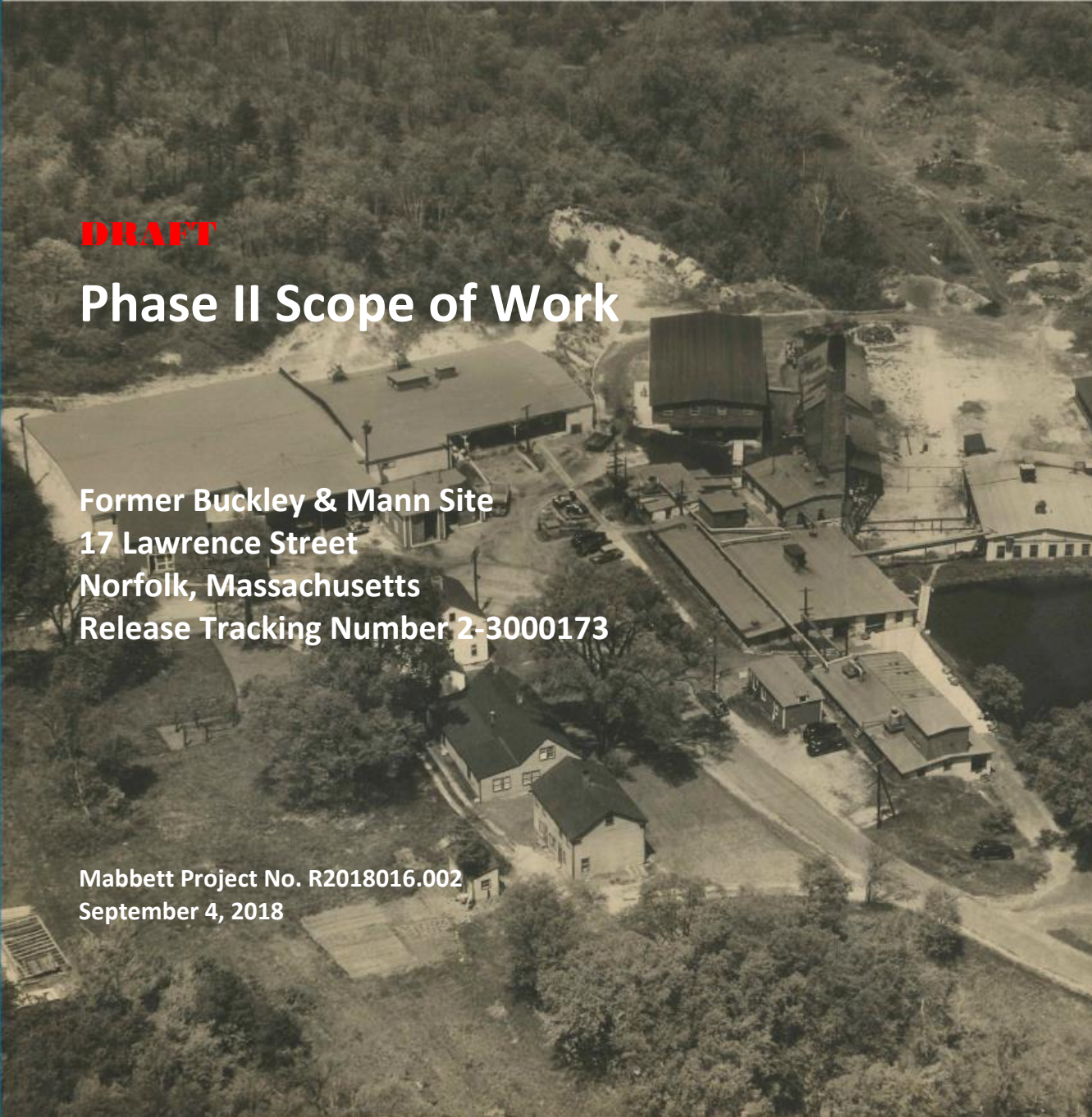




DRAFT

Phase II Scope of Work

**Former Buckley & Mann Site
17 Lawrence Street
Norfolk, Massachusetts
Release Tracking Number 2-3000173**

**Mabbett Project No. R2018016.002
September 4, 2018**

Prepared for:
Buckley & Mann, Inc.
17 Lawrence Street
Norfolk, Massachusetts 02056

[Mabbett & Associates, Inc.](#)
5 Alfred Circle
Bedford, MA 01730-2318
T: 781-275-6050

www.mabbett.com

Massachusetts | Virginia | Rhode Island | New Jersey

© 2018, Mabbett & Associates, Inc.

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION	1
2.0 SITE BACKGROUND	2
2.1 Site Description and History.....	2
2.2 MCP Comprehensive Response Action History.....	2
2.3 Post-RAO Environmental Sampling Efforts	3
2.4 2017 MassDEP Audit	3
3.0 PHASE II SCOPE OF WORK	5
3.1 Dyehouse Lagoons (Lagoon #1 and Lagoon #2).....	5
3.2 Lagoon #3.....	5
3.3 Historical Soil Piles	6
3.4 Carbonizer Trench and Lagoon	6
3.5 Tail Race	6
3.6 Mill River	6
3.7 Bush Pond	7
3.8 Groundwater.....	7
3.9 Risk Characterization	8
4.0 PHASE II SCHEDULE	9
5.0 LIMITATIONS	10

TABLES

- 2-1 2018 Carbonizer Lagoon, Carbonizer Trench, and Tail Race Analytical Results
- 3-1 Summary of Proposed Soil/Sediment Sampling Program
- 3-2 Summary of Proposed Surface Water Sampling Program
- 3-3 Summary of Proposed Groundwater Sampling Program

FIGURES

- 2-1 2018 Sampling Locations
- 3-1 Proposed Sampling Locations

ACRONYMS

AUL	Activity and Use Limitation
CAM	Compendium of Analytical Methods
CDM	Camp, Dresser, and McKee
CSA	Comprehensive Site Assessment
CSM	Conceptual Site Model
DO	Dissolved Oxygen
EPH	Extractable Petroleum Hydrocarbons
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
NOAF	Notice of Audit Findings
NON	Notice of Noncompliance
OHM	Oil and Hazardous Materials
ORP	Oxidation-Reduction Potential
PAHs	Polycyclic Aromatic Hydrocarbons
PIP	Public Involvement Plan
RAM	Release Abatement Measure
RAO	Response Action Outcome
RCS	Reportable Concentration for Soil
RTN	Release Tracking Number
SOW	Scope of Work
TOC	Total Organic Carbon
UST	Underground Storage Tank
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Mabbett & Associates (Mabbett), on behalf of Buckley & Mann, Inc., has prepared this Phase II Comprehensive Site Assessment (CSA) Scope of Work (SOW) for Release Tracking Number (RTN) 2-3000173. This Phase II SOW has been prepared in accordance with 310 CMR 40.0834 of the Massachusetts Contingency Plan (MCP).

The former Buckley & Mann Property consists of three parcels of land totaling approximately 140 acres in size that are presently vacant and unoccupied (the Property). The vast majority of the Property (+/- 120 acres) consists of undeveloped, wooded land, however an approximately 20-acre portion of the property (the Site) is the location of a former textile manufacturing facility that is a regulated “disposal site” under the MCP due to a historical release of polycyclic aromatic hydrocarbons (PAHs) and heavy metals.

Response actions to address the release of PAHs and heavy metals were completed in the late-1990s and a Permanent Solution was achieved on August 20, 2001. The Class A-3 Response Action Outcome (RAO) relied on implementation of an Activity and Use Limitation (AUL) to prevent exposure to contaminated soils that remained on-site beneath a clean soil barrier after the completion of cleanup activities. The AUL was recorded at the Norfolk Registry District of the Land Court on August 20, 2001.

In September 2017, MassDEP conducted an audit of the Class A-3 RAO. MassDEP issued a Notice of Audit Findings/Notice of Noncompliance (NOAF/NON) to Buckley & Mann on November 17, 2017 describing deficiencies identified during the audit. MassDEP provided Buckley & Mann with 180 days to take action to remedy the deficiencies identified in the NOAF/NON. Buckley & Mann was unable to complete the assessment work required to bring the Site back into compliance with the MCP within this time frame, therefore on May 14, 2018, Buckley & Mann terminated the AUL, retracted the Permanent Solution, and filed a Tier Classification Extension.

On May 23, 2018, residents of the Town of Norfolk submitted a petition to Buckley & Mann requesting that the Site be designated as a Public Involvement Plan (PIP) site in accordance with Section 310 CMR 40.1404 of the MCP. The Site was designated as a PIP site on June 12, 2018. Since the Site has been classified as a Tier II site under the applicable provisions of the MCP, the Licensed Site Professional (LSP) for the Site is responsible for overseeing response actions under the MCP, including the public involvement provisions of the regulations. The LSP for this Site is Stephen Vetere (vetere@mabbett.com).

As detailed in this Phase II SOW, additional Phase II CSA activities will be performed to characterize the nature and extent of contamination at the Site in order to develop human health and environmental risk assessments.

This Draft Phase II SOW will be presented by Mabbett, on behalf of Buckley & Mann, at a public meeting to be held on September 4, 2018 at 7:00 PM in the community room at the Norfolk Public Library in Norfolk, Massachusetts. The Draft Phase II SOW will be placed into document repositories in the Norfolk and Franklin public libraries, and uploaded to the MassDEP’s Reportable Release File Viewer, and there will be a 20-day public comment period during which Mabbett will accept comments on the Draft Phase II SOW. Comments may be submitted in writing to:

Stephen Vetere, PE, LSP
Mabbett & Associates
5 Alfred Circle
Bedford, MA 01730
vetere@mabbett.com

Comments should be submitted before the close of business on September 24, 2018.

2.0 SITE BACKGROUND

The following sections provide a description of the Site conditions and the Site's regulatory history.

2.1 Site Description and History

The former Buckley & Mann Property consists of three parcels of land totaling approximately 140 acres in size that are presently vacant and unoccupied (the Property). The vast majority of the Property (+/- 120 acres) consists of undeveloped, wooded land, however an approximately 20-acre portion of the property (the Site) is the location of a former textile manufacturing facility that is a regulated "disposal site" under the MCP due to a historical release of PAHs and heavy metals.

The Site is bordered by residential properties to the south and east along Lawrence and Park Streets, by the Mill River and undeveloped land to the north, and by undeveloped land and a former gravel pit to the west. The northern portion of the Site is occupied by wetlands associated with Bush Pond, the Mill River, and three former man-made wastewater lagoons. From these low areas of the Site, the topography climbs steeply to the northeast and southwest, with approximately 80 feet of relief in either direction. The Site lies in a topographical valley between these two embankments.

The Site has been vacant and unoccupied since Buckley & Mann ceased operations in 1994, and by 2011 all of the buildings that comprised the industrial complex had been demolished. Currently, the remnants of the concrete slabs of several buildings remain at the Site, and surface features used during industrial operations remain including three wastewater lagoons, a wastewater trench, and a tailrace that was part of a hydroelectric generation system that operated on the Site.

The depth to groundwater measured in monitoring wells at the Site ranges from approximately 3 to over 8 feet below ground surface. Groundwater is interpreted to flow in a generally northward direction, ultimately discharging to the Mill River, which flows from east to west through the northern portion of the Site, and ultimately discharges to City Mills Pond approximately 0.8 miles to the north of the former mill complex.

Buckley & Mann operated a textile manufacturing facility at the Site for approximately 90 years, finally ceasing operations at this location in 1994. Over the course of its history at the Norfolk facility, Buckley & Mann operated a "carbonizer" process and a dyehouse, utilized trenches and lagoons for the management and treatment of wastewater, and utilized underground storage tanks (USTs) for the storage of oil. Based on the review of Site history and industrial operations, the following features were identified as potential sources of contamination to the environment:

- Carbonizer Trench and Carbonizer Lagoon, which received wastewater from the carbonizer operation and served to facilitate settling and facultative biological treatment of wastewater.
- Lagoon #1 and Lagoon #2, which received wastewater from the dyehouse and served to facilitate settling and facultative biological treatment of wastewater.
- Area #10, which was a debris disposal area utilized during operation of the facility.

2.2 MCP Comprehensive Response Action History

Environmental assessment activities at the Site commenced in 1986 by Buckley & Mann's environmental consultant, Camp Dresser and McKee (CDM). Between 1986 and 1996, CDM characterized the Site and developed a cleanup plan. The remedial strategy included the consolidation of soils with low levels of contamination into a portion of Area #10, with off-Site disposal of only the most highly contaminated soils. A vegetated soil cover would be placed over the consolidated material to provide a barrier to prevent direct contact with contaminated soils. This remedial strategy would be dependent upon implementation of an AUL to prevent excavation of soils greater than 3 feet below ground surface and any activity which may cause physical, chemical, or structural damage to the protective barrier. Site remediation was completed in 1998 and 1999, and the Site was closed out in 2001.

through submittal of a Class A-3 RAO Statement. A Notice of AUL was recorded for the Site at the Norfolk Registry District of the Land Court on August 20, 2001.

2.3 Post-RAO Environmental Sampling Efforts

The following additional sampling activities have occurred at the Site since the 2001 RAO to support potential redevelopment of the property:

- In 2011, the on-Site buildings were demolished. In September 2013, thirty-eight test pits were excavated through the concrete pads of the former Site buildings in an effort to characterize the soils beneath the pads prior to redevelopment.
- In June 2014, groundwater samples were collected from six on-Site monitoring wells.
- In August 2014, twenty-three additional test pits were excavated on the Site to further characterize the soil in the vicinity of the remaining building slabs.
- In October 2014, surface water samples were collected from Bush Pond and City Mills Pond to evaluate surface water conditions at two locations that receive stormwater drainage from the Site.
- In November 2014, a second set of surface water samples was collected from upstream and downstream locations to evaluate the extent to which surface water contamination could be attributed to runoff from the former Buckley & Mann Site.
- In April 2015, an additional round of groundwater samples was collected from six on-Site monitoring wells.
- In June 2015, groundwater samples were collected from three additional monitoring wells located beyond the limits of historical industrial activity to evaluate the extent to which contamination had migrated to potential off-Site receptors.
- In September 2015, additional groundwater samples were collected from five monitoring wells.

Environmental sampling data collected during these assessment activities was consistent with the data collected during the 1986-1999 response actions and did not reveal any new or additional reporting conditions.

2.4 2017 MassDEP Audit

In September 2017, MassDEP conducted an audit of the Class A-3 RAO (now referred to as a Permanent Solution with Conditions). Audits of this type are common under the MCP, as the MCP is a privatized cleanup program that relies upon the opinions of LSPs to determine the adequacy of environmental remediation measures, and MassDEP is mandated by statute to audit a portion of these opinions. MassDEP may initiate, at any time, an audit of any site subject to an AUL.

MassDEP issued a NOAF/NON to Buckley & Mann on November 17, 2017 describing the deficiencies identified during the audit. The letter can be reviewed on the MassDEP on-line file viewer at the following link:

<http://eeaonline.eea.state.ma.us/EEA/fileviewer/Default.aspx?formdataid=0&documentid=423796>

The following is a summary of violations described in the NOAF/NON letter:

- Violation #1: MassDEP identified three deficiencies related to the Notice of AUL.
 - Richard Mann signed the AUL as President and Treasurer of Buckley & Mann, however the AUL did not contain documentation verifying the signatory authority as required by the MCP.
 - The Permanent Solution was predicated on restricting residential use, however the AUL did not contain an explicit prohibition of residential use.

- Prior to recording the AUL, current holders of any record interests in the AUL area must be notified by certified mail of the existence of the AUL. Documentation was not provided to MassDEP to verify that this notification was made to record interest holders.
- Violation #2: MassDEP acknowledged that a Method 1 human health risk assessment was performed for the Site, but that a Stage 1 Environmental Screening should have been performed as part of the risk assessment.

MassDEP provided Buckley & Mann with 180 days to take action by either a) correcting these deficiencies and resubmitting a Permanent Solution Statement with AUL or b) terminating the AUL, retracting the Permanent Solution, and establishing a schedule for correcting the violations.

In order to complete the Stage 1 Environmental Screening, additional site assessment activities were completed in the Carbonator Trench, Carbonator Lagoon, and Tail Race. In March 2018, additional soil samples were collected from each of these areas to characterize the nature and extent of contamination. In April 2018, additional soil sampling was performed within the Carbonizer Lagoon in an effort to delineate the horizontal and vertical extent of contamination in areas where metals and PAHs were detected above reportable concentrations during the March 2018 sampling effort. The results of this sampling are provided in Table 2-1. Sample locations are depicted on Figure 2-1.

On July 20, 2018, Buckley & Mann submitted a revised release notification for RTN 2-3000173 to formally document the detection of antimony, cadmium, and 2-methylnaphthalene in soil above RCS-1 during the March 2018 sampling effort. These detections do not represent a new release condition since RTN 2-3000173 already addresses a release of metals and PAHs to soil, but this revised notification was submitted in the interest of completeness and transparency.

3.0 PHASE II SCOPE OF WORK

In an effort to collect additional environmental data to support the human health and environmental risk assessments, additional soil, sediment, surface water, and groundwater sampling data is planned at the Site. This section details the investigative activities planned for the Buckley & Mann Site. Proposed soil and/or sediment sampling locations are summarized in Table 3-1, surface water sampling locations are summarized in Table 3-2, and groundwater sampling locations in Table 3-3. Environmental sampling locations are depicted on Figure 3-1.

3.1 Dyehouse Lagoons (Lagoon #1 and Lagoon #2)

Two soil/sediment samples will be collected from each of the two dyehouse lagoons for laboratory analysis (the determination of whether the substrate material in the lagoons meets the MCP definition of soil or sediment will be made by an ecologist and professional wetland scientist). Co-located surface water samples will be collected from each location if surface water is present at the time of sampling. The objective of these samples is to characterize the level of contamination in each lagoon so that potential human health and environmental risks can be estimated to support decisions regarding the appropriate remedial actions. The dyehouse lagoons received wastewater from the former dyehouse operation that operated at the Site from the 1940s until 1986.

Each soil/sediment sample will be collected from 0- to 6-inches below ground surface using a hand auger or spaded shovel. All sampling tools will be decontaminated before sample collection and between sampling locations to prevent cross-contamination of samples. Immediately upon collection of each sample, an aliquot will be set aside for field screening using a photoionization detector (PID) by the MassDEP Jar Headspace Technique. The remaining sampled media will be containerized into pre-cleaned glass jars for submittal to a Massachusetts-licensed analytical laboratory. Surface water samples will be collected by directly dipping the sampling container into the surface water, or with the assistance of a peristaltic pump if surface water levels are too low to enable sampling by direct dip.

Samples collected from the dyehouse lagoons will be analyzed for the presence of MCP metals, PAHs, extractable petroleum hydrocarbons (EPH), total organic carbon (TOC), and pH. One sample from each lagoon will also be submitted for laboratory analysis of hexavalent chromium. Surface water samples will be analyzed for the presence of MCP metals, PAHs, EPH, and pH. All laboratory analyses will be in accordance with the MassDEP Compendium of Analytical Methods (CAM).

If one or more contaminant is detected above its MCP Reportable Concentration for Category S-1 (RCS-1) soil, then contingent samples will be collected to the north and south of that location to further evaluate the extent of contamination in the lagoon substrate material. Contingent samples will only be analyzed for the group of chemicals that were detected above RCS-1 in the initial sample.

3.2 Lagoon #3

Two soil/sediment samples will be collected from Lagoon #3 for laboratory analysis. Co-located surface water samples will be collected from each location if surface water is present at the time of sampling. The objective of these samples is to determine whether the substrate and water in this lagoon contains Site-related contaminants. Lagoon #3 reportedly never received wastewater from the dyehouse, but was used for the diversion of groundwater discharging from a spring located on the hill to the south of the Site.

Sampling methods and laboratory analyses for samples collected from Lagoon #3 will be the same as described in Section 3.1 for Lagoons #1 and #2. Contingent samples will also be collected, if necessary, as described above in Section 3.1.

3.3 Historical Soil Piles

Four soil samples will be collected from each of the former locations of soil piles located to the south of the dyehouse lagoons (Area #3, Area #5, and Area #6). These historical soil piles were comprised of material that was excavated from dyehouse lagoons during operation of the facility:

- Area #3 was a pile consisting of soil removed from Lagoon #1 in 1975 that was stockpiled 50 feet to the south of Lagoon #1.
- Area #5 was a pile consisting of soil removed from Lagoon #1 in 1988, also stockpiled to the south of Lagoon #1 but to the east of Area #3.
- Area #6 was a pile consisting of soil removed from the former dyehouse trench to Lagoon #1 that was stockpiled 100 feet southeast of Lagoon #1.

The material stockpiled at these locations was consolidated beneath the clean soil cover during remedial actions completed in 1998 and 1999. However, there were no samples collected from beneath the piles to verify the complete removal of contamination. The objective of the proposed sampling is to determine whether residual Site-related contaminants are present in soils.

Soil samples will be collected from two separate locations within each area. At each location, a sample will be collected from the 0- to 1-foot below ground surface depth interval and a second sample will be collected from the 1- to 3-foot below ground surface depth interval (four samples total from each area). Soil samples will be collected using a hand auger or shovel utilizing the methods described in Section 3.1. Soil samples collected from the historical soil pile areas will be analyzed for the presence of MCP metals, PAHs, and EPH.

3.4 Carbonizer Trench and Lagoon

Extensive sampling of soil/sediment within the Carbonizer Trench and Carbonizer Lagoon was performed in March and April 2018. The results of this sampling effort are provided in Table 2-1 and on Figure 2-1. Three additional soil samples are proposed for the Carbonizer Trench/Lagoon area to improve the delineation of EPH and metals. These samples will be collected from 0- to 1-foot below ground surface adjacent to 2018 sampling locations where these contaminants were present above RCS-1. Soil samples will be collected using a hand auger or shovel utilizing the methods described in Section 3.1. Soil samples collected from the Carbonizer Trench and Carbonizer Lagoon will be analyzed for the presence of MCP metals, EPH, TOC, and pH.

3.5 Tail Race

Three soil/sediment samples will be collected from the Tail Race for laboratory analysis (the determination of whether the substrate material in the lagoons meets the definition of soil or sediment will be made by an ecologist and professional wetland scientist). Co-located surface water samples will be collected from each location if surface water is present at the time of sampling. The objective of these samples is to determine whether Site-related contaminants are present in environmental media within the Tail Race. The Tail Race is a remnant of a historical hydroelectric system that used the head difference between Bush Pond and the Mill River to generate electricity. Clean water passed through a water wheel and into the Tail Race before being returned to the Mill River to the north of the Site. The sampling methods and laboratory analyses for samples collected from the Tail Race will be the same as described in Section 3.1.

3.6 Mill River

Three co-located sediment and surface water samples will be collected from the Mill River for laboratory analysis. The objective of these samples is to evaluate for the presence of Site-related contaminants in the Mill River to support the human health and environmental risk assessments.

Each sediment sample will be collected from 0- to 6-inches below the river bottom using a hand auger or spaded shovel. Surface water samples will be collected by directly dipping the sampling container into the surface water. Sediment samples collected from the Mill River will be analyzed for the presence of MCP metals, PAHs, EPH, TOC, and pH. One of the sediment samples will also be submitted for laboratory analysis of hexavalent chromium. Surface water samples will be analyzed for the presence of MCP metals, PAHs, EPH, and pH. Surface water samples for metals analysis will be filtered prior to laboratory analysis.

3.7 Bush Pond

Three co-located sediment and surface water samples will be collected from Bush Pond for laboratory analysis. Two samples will be collected along the bank of Bush Pond adjacent to the former Carbonizer and Dyehouse buildings. The objective of the two samples is to evaluate for the presence of Site-related contaminants in Bush Pond to support the human health and environmental risk assessments. The third sample will be collected from the portion of Bush Pond located to the east of Lawrence Street. The objective of this sample is to evaluate contaminant levels in a portion of Bush Pond that is unlikely to have been impacted by historical Site operations, to provide a reference point for local anthropogenic background conditions.

Each sediment sample will be collected from approximately 0- to 6-inches below the pond bottom using a sediment core sampler, bottom dredge, or equivalent device capable of collecting representative samples from the pond bottom. Surface water samples will be collected by directly dipping the sampling container into the surface water. Sediment samples collected from Bush Pond will be analyzed for the presence of MCP metals, PAHs, EPH, TOC, and pH. One of the sediment samples will also be submitted for laboratory analysis of hexavalent chromium. Surface water samples will be analyzed for the presence of MCP metals, PAHs, EPH, and pH. Surface water samples for metals analysis will be filtered prior to laboratory analysis.

3.8 Groundwater

One additional round of groundwater samples will be collected from existing on-site monitoring wells for laboratory analysis of MCP metals, PAHs, EPH, and volatile organic compounds (VOCs). Groundwater samples will be collected from monitoring wells EW-1, EW-2, MW-2, MW-3, MW-5, and MW-6 using the low-flow sampling methodology:

- Groundwater purging and sampling will be conducted using a peristaltic pump with disposable tubing, which will be replaced between each well.
- The following parameters will be monitored while the well is being purged using a multi-meter water quality meter equipped with a flow-through cell: time, flow rate, temperature, pH, oxidation reduction potential (ORP), conductivity, dissolved oxygen (DO), and turbidity.
- Turbidity will be collected using a wye bypass valve prior to water entering the flow-through cell.
- Draw-down within the well will be monitored continuously while pumping and kept to a minimum.
- Once the groundwater quality parameters have stabilized (according to the EPA stabilization criteria), the tubing will be disconnected from the flow-through cell, and the groundwater sample will be collected directly from the disposable tubing to prevent cross-contamination between wells.
- The groundwater sample collected for VOC analysis will be collected into a laboratory-supplied 40-milliter glass volatile organic analysis (VOA) vial fitted with a Teflon-lined cap. Care will be taken to eliminate air bubbles in the collected sample.
- The groundwater sample for metals, PAH, and EPH analysis will be collected directly into laboratory-supplied containers. The sample for metals analysis will be passed through a 0.45-micron filter prior to being collected into the sampling container.

- All groundwater samples will be stored in an iced-cooler and delivered under chain-of-custody to the analytical laboratory.
- Purge water will be collected in 5-gallon buckets and discharged to the ground adjacent to the wellhead after samples are collected.

A groundwater elevation survey will also be performed at the Site to measure the depth to groundwater in each of the on-site wells so that a groundwater contour map can be developed to infer the groundwater flow direction.

3.9 Risk Characterization

Data obtained during the additional Phase II sampling activities will be utilized to refine the conceptual site model (CSM) and perform additional risk characterization. The results of the human health and environmental risk characterizations will be used to determine if remedial measures are required to achieve a Permanent Solution and if so, to determine cleanup goals and the extent of remediation.

DRAFT

4.0 PHASE II SCHEDULE

The anticipated schedule for completing the Phase II activities is summarized in the table below:

Milestone	Date
Submit Draft Phase II Scope of Work	September 4, 2018
Public Comment Period Ends	September 24, 2018
Response to Public Comments	October 1, 2018
Final Phase II Scope of Work	October 8, 2018
Field Investigations	October 15, 2018

5.0 LIMITATIONS

This Phase II SOW, associated with Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 2-3000173, has been prepared for the sole and exclusive use of Buckley & Mann and DiPlacido Development Corporation. Any use or reliance upon information provided in this report, without the specific written authorization of Buckley & Mann, DiPlacido Development Corporation, and Mabbett & Associates shall be at the User's sole risk.

The professional opinions and findings presented in this Phase II SOW are based on the facts and information conveyed to, or observed, by Mabbett® during completion of this project. Furthermore, assessment and field operations associated with this RTN have been performed in accordance with generally accepted engineering practices. No other warranty, expressed or implied, is made.

The Phase II SOW presented herein is based solely upon the laws and regulations existing as of the date of this report, as well as information gathered to date including a limited number of subsurface explorations made on the dates indicated. Based upon an evaluation, Mabbett may modify this report and its conclusions.

DRAFT

TABLES

Table 2-1
2018 Carbonizer Trench, Carbonizer Lagoon, and Tail Race Analytical Results
Former Buckley & Mann Site
Norfolk, Massachusetts

SITE AREA			CARBONIZER TRENCH													
			CTSS-1	CTSS-2	CTSS-3	CTSS-3 1-2	CTSS-3 2-3	CTSS-4	CTSS-4 1-2	CTSS-4 2-3	CTSS-5 0-1	CTSS-5 1-2	CTSS-5 2-3	CTSS-6 0-1	CTSS-6 1-2	CTSS-6 2-3
SAMPLING DATE			3/12/18	3/12/18	3/12/18	4/20/18	4/20/18	3/12/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18
SAMPLE DEPTH (FT BGS)			0-1	0-1	0-1	1-2	2-3	0-1	1-2	2-3	0-1	1-2	2-3	0-1	1-2	2-3
MCP METHOD 1 STANDARDS	S-1/GW-1	S-1/GW-3														
Metals (mg/kg)																
Antimony	20	20	1.97 U	1.17 U	3.03	1.22 U	1.32 U	1.39 U	1.27 U	1.11 U	4.59	12.9	1.28 U	1.11 U	1.16 U	1.45 U
Arsenic	20	20	6.15	4.93	9.50	1.22 U	1.32 U	7.44	1.27 U	1.11 U	3.75	8.16	2.27	1.11 U	1.16 U	1.45 U
Barium	1000	1000	55.1	17.5	30.4	20.5	31.1	48.5	15.7	16.0	22.9	48.4	21.3	12.7	14.2	27.0
Beryllium	90	90	0.99 U	0.58 U	0.97 U	0.61 U	0.66 U	0.69 U	0.63 U	0.56 U	0.69 U	0.73 U	0.64 U	0.56 U	0.58 U	0.72 U
Cadmium	70	70	5.17	3.92	7.75	1.67	1.94	6.91	0.87	0.90	0.69 U	0.73 U	1.28	0.58	0.82	1.04
Chromium (III)	1000	1000	23.5	49.6	256	10.9	27.6	96.1	31.2	17.2	165	454	40.7	4.70	3.08	42.0
Chromium (VI)	100	100	3 U	2 U	3 U	---	---	6.00	---	---	15.0	8.0 U	---	---	---	---
Lead	200	200	52.1	59.2	971	15.2	35.0	380	14.6	15.7	257	676	42.8	4.59	4.19	47.1
Mercury	20	20	0.252	0.515	1.08	0.085 U	0.079 U	0.49	0.069 U	0.066 U	1.12	1.43	0.084 U	0.070 U	0.076 U	0.211
Nickel	600	600	38.2	5.82	8.53	13.0	12.5	21.6	12.3	36.1	3.42	65.0	12.8	2.50	6.28	4.02
Selenium	400	400	1.97 U	1.17 U	1.93 U	1.22 U	1.32 U	1.39 U	1.27 U	1.11 U	1.38 U	1.46 U	1.28 U	1.11 U	1.16 U	1.45 U
Silver	100	100	0.99 U	0.58 U	0.97 U	0.61 U	0.66 U	0.69 U	0.63 U	0.56 U	1.07	5.69	0.64 U	0.56 U	0.58 U	0.72 U
Thallium	8	8	0.397 U	0.235 U	0.389 U	0.247 U	0.266 U	0.28 U	0.256 U	0.224 U	0.277 U	0.294 U	0.259 U	0.224 U	0.233 U	0.292 U
Vanadium	400	400	21.9	27.4	29.4	11.7	10.3	15.5	9.38	9.11	17.1	10.0	17.6	7.38	6.32	17.0
Zinc	1000	1000	190	31.8	64.3	102	80.7	184	38.0	39.7	17.8	20.2	69.2	11.1	17.1	20.6
Extractable Petroleum Hydrocarbons (mg/kg)																
C11-C22 Aromatics			46.3 U	---	38.7 U	---	17.7	---	---	14.7 U	161	---	---	14.9 U	---	---
C11-C22 Aromatics, Adjusted	1000	1000	46.3 U	---	38.7 U	---	17.7	---	---	14.7 U	161	---	---	14.9 U	---	---
C9-C18 Aliphatics	1000	1000	46.3 U	---	38.7 U	---	17.7 U	---	---	14.7 U	17.2 U	---	---	14.9 U	---	---
C19-C36 Aliphatics	3000	3000	46.3 U	---	64.9	---	45.2	---	---	14.7 U	594	---	---	14.9 U	---	---
2-Methylnaphthalene	0.7	300	1.15 U	---	1.16	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Acenaphthene	4	1000	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Acenaphthylene	1	10	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Anthracene	1000	1000	1.15 U	---	1.11	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Benzo(a)anthracene	7	7	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Benzo(a)pyrene	2	2	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Benzo(b)fluoranthene	7	7	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Benzo(ghi)perylene	1000	1000	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Benzo(k)fluoranthene	70	70	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Chrysene	70	70	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Dibenzo(a,h)anthracene	0.7	0.7	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Fluoranthene	1000	1000	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Fluorene	1000	1000	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Indeno(1,2,3-cd)Pyrene	7	7	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Naphthalene	4	500	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Phenanthrene	10	500	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---
Pyrene	1000	1000	1.15 U	---	0.96 U	---	0.44 U	---	---	0.36 U	0.43 U	---	---	0.37 U	---	---

Notes:
1. mg/kg = milligrams per kilogram
2. bold type = detected constituents
3. shaded cells = MCP standard exceeded
4. U = not detected above laboratory limits
5. --- = sample not analyzed for this constituent
6. Where no Cr6+ data is available, all chromium assumed to be Cr3+

Table 2-1
2018 Carbonizer Trench, Carbonizer Lagoon, and Tail Race Analytical Results
Former Buckley & Mann Site
Norfolk, Massachusetts

SITE AREA			CARBONIZER LAGOON												
			CLSS-1	CLSS-2	CLSS-3	CLSS-4	CLSS-5	CLSS-5	CLSS-5	CLSS-6	CLSS-6	CLSS-6	CLSS-7	CLSS-7	CLSS-7
SAMPLING DATE			3/12/18	3/12/18	3/12/18	3/12/18	3/12/18	4/20/18	4/20/18	3/12/18	4/20/18	4/20/18	3/12/18	4/20/18	4/20/18
SAMPLE DEPTH (FT BGS)			0-1	0-1	0-1	0-1	0-1	1-2	2-3	0-1	1-2	2-3	0-1	1-2	2-3
MCP METHOD 1 STANDARDS	S-1/GW-1	S-1/GW-3													
Metals (mg/kg)															
Antimony	20	20	1.54	6.19	1.97	13.7	33.9	16.1	1.80 U	39.1	1.20 U	1.06 U	8.99	1.31 U	1.32 U
Arsenic	20	20	6.23	4.94	4.41	1.62 U	4.48	14.1	2.88	17.9	1.20 U	1.06 U	5.37	1.37	1.32 U
Barium	1000	1000	60.2	82.6	60.6	11.2	103	389	111	155	62	18.4	61.8	30.6	18.6
Beryllium	90	90	0.44 U	0.68 U	0.58 U	0.81 U	1.42 U	1.26 U	0.90 U	1.55 U	0.60 U	0.53 U	1.56 U	0.65 U	0.66 U
Cadmium	70	70	8.67	8.94	3.93	0.81 U	2.23	8.97	2.68	86.4	1.67	0.91	2.60	1.94	1.21
Chromium (III)	1000	1000	134	361	144	196	1440	599	76.2	1780	35.4	11.3	399	41.5	44.6
Chromium (VI)	100	100	2 U	2 U	2 U	15	11	5.0 U	---	11	---	---	4.0 U	---	---
Lead	200	200	410	745	283	413	1880	2100	208	1900	16.3	7.66	762	45.0	57.4
Mercury	20	20	0.983	2.34	1.16 U	1.11	8.85	4.41	0.917	7.14	0.179	0.045 U	2.06	0.093 U	0.072 U
Nickel	600	600	28.2	32.0	11.5	3.22	11.8	25.0	20.1	72.3	12.1	10.1	8.95	15.4	8.99
Selenium	400	400	0.88 U	1.37 U	1.16 U	1.62 U	2.83 U	2.52 U	1.80 U	3.11 U	1.20 U	1.06 U	3.11 U	1.31 U	1.32 U
Silver	100	100	0.44 U	0.68 U	0.58 U	5.55	35.5	5.51	0.90 U	53.6	0.60 U	0.53 U	5.74	0.65 U	0.66 U
Thallium	8	8	0.178 U	0.276 U	0.233 U	0.326 U	0.571 U	0.509 U	0.363 U	0.626 U	0.241 U	0.213 U	0.627 U	0.263 U	0.267 U
Vanadium	400	400	25.9	18.8	13.2	9.53	23.7	35.2	14.1	57.4	28.8	12.8	24.4	27.5	21.9
Zinc	1000	1000	219	181	135	43.4	140	466	571	4850	150	82.7	67.9	92.2	45.9
Extractable Petroleum Hydrocarbons (mg/kg)															
C11-C22 Aromatics			38.4	---	---	---	---		97.8	---	45.8	15.1 U	---	---	17.1 U
C11-C22 Aromatics, Adjusted	1000	1000	38.4	---	---	---	---		97.8	---	45.8	15.1 U	---	---	17.1 U
C9-C18 Aliphatics	1000	1000	23.1 U	---	---	---	---		23.5 U	---	17.2 U	15.1 U	---	---	17.1 U
C19-C36 Aliphatics	3000	3000	149	---	---	---	---		235	---	192	40.1	---	---	28.2
2-Methylnaphthalene	0.7	300	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Acenaphthene	4	1000	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Acenaphthylene	1	10	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Anthracene	1000	1000	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Benzo(a)anthracene	7	7	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Benzo(a)pyrene	2	2	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Benzo(b)fluoranthene	7	7	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Benzo(ghi)perylene	1000	1000	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Benzo(k)fluoranthene	70	70	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Chrysene	70	70	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Dibenzo(a,h)anthracene	0.7	0.7	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Fluoranthene	1000	1000	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Fluorene	1000	1000	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Indeno(1,2,3-cd)Pyrene	7	7	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Naphthalene	4	500	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Phenanthrene	10	500	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U
Pyrene	1000	1000	0.57 U	---	---	---	---		0.58 U	---	0.43 U	0.37 U	---	---	0.42 U

Notes:
1. mg/kg = milligrams per kilogram
2. bold type = detected constituents
3. shaded cells = MCP standard exceeded
4. U = not detected above laboratory limits
5. --- = sample not analyzed for this constituent
6. Where no Cr6+ data is available, all chromium assumed to be Cr3+

Table 2-1
2018 Carbonizer Trench, Carbonizer Lagoon, and Tail Race Analytical Results
Former Buckley & Mann Site
Norfolk, Massachusetts

SITE AREA			CARBONIZER LAGOON												
			CLSS-8	CLSS-9	CLSS-9	CLSS-9	CLSS-10	CLSS-10	CLSS-10	CLSS-11	CLSS-11	CLSS-11	CLSS-12	CLSS-12	CLSS-12
SAMPLING DATE			3/12/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18	4/20/18
SAMPLE DEPTH (FT BGS)			0-1	0-1	1-2	2-3	0-1	1-2	2-3	0-1	1-2	2-3	0-1	1-2	2-3
MCP METHOD 1 STANDARDS	S-1/GW-1	S-1/GW-3													
Metals (mg/kg)															
Antimony	20	20	8.47	41.6	23.7	26.4	35.6	2.41 U	2.33 U	7.06	1.24 U	1.28 U	48.6	41.3	1.36 U
Arsenic	20	20	3.84 U	10.3	3.67	5.44	9.45	6.50	2.33 U	7.39	1.24 U	1.28 U	12.9	10.8	2.24
Barium	1000	1000	56.2	33.1	49.1	90.1	180	249	92.8	11.6	15.0	15.4	40.1	262	32.3
Beryllium	90	90	1.92 U	1.43 U	1.36 U	1.71 U	1.63 U	1.20 U	1.16 U	0.98 U	0.62 U	0.64 U	1.36 U	1.38 U	0.68 U
Cadmium	70	70	3.62	1.43 U	3.76	4.13	2.78	2.42	1.16 U	0.98 U	1.50	1.52	1.36 U	1.38 U	2.13
Chromium (III)	1000	1000	446	1420	672	550	1040	88.7	32.3	207	49.4	23.5	1780	1290	61.3
Chromium (VI)	100	100	6.0 U	9.0	7.0	66	67	---	---	79	---	---	14	18	---
Lead	200	200	901	444	153	1120	1020	160	20.0	378	95.9	17.5	281	464	194
Mercury	20	20	1.07	3.62	2.59	6.15	5.31	0.292	0.144 U	0.574	0.090 U	0.082 U	5.14	5.86	0.171
Nickel	600	600	11.9	5.35	17.3	21.0	8.79	20.4	19.3	1.89	5.22	8.70	8.52	17.1	11.8
Selenium	400	400	3.84 U	3.50	2.72 U	3.41 U	3.26 U	2.41 U	2.33 U	1.96 U	1.24 U	1.28 U	4.23	2.76 U	1.36 U
Silver	100	100	13.5	21.4	7.20	9.76	14.3	1.20 U	1.16 U	0.98 U	0.62 U	0.64 U	23.0	24.8	0.68 U
Thallium	8	8	0.773 U	0.576 U	0.548 U	0.688 U	0.657	0.485 U	0.469 U	0.395 U	0.251 U	0.258 U	0.547 U	0.557 U	0.363
Vanadium	400	400	25.6	151	104	28.1	79.6	20.8	12.0	45.3	24.6	21.6	126	82.6	23.0
Zinc	1000	1000	60.0	20.8	414	414	160	290	120	8.0	23.3	24.9	28.2	34.0	21.7
Extractable Petroleum Hydrocarbons (mg/kg)															
C11-C22 Aromatics			---	497	---	1400	458	---	50.5	---	---	16.6 U	---	---	---
C11-C22 Aromatics, Adjusted	1000	1000	---	497	---	1400	458	---	50.5	---	---	16.6 U	---	---	---
C9-C18 Aliphatics	1000	1000	---	33.7 U	---	131	43.3 U	---	28.1 U	---	---	16.6 U	---	---	---
C19-C36 Aliphatics	3000	3000	---	1800	---	5410	1670	---	101	---	---	16.6 U	---	---	---
2-Methylnaphthalene	0.7	300	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Acenaphthene	4	1000	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Acenaphthylene	1	10	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Anthracene	1000	1000	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Benzo(a)anthracene	7	7	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Benzo(a)pyrene	2	2	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Benzo(b)fluoranthene	7	7	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Benzo(ghi)perylene	1000	1000	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Benzo(k)fluoranthene	70	70	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Chrysene	70	70	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Dibenzo(a,h)anthracene	0.7	0.7	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Fluoranthene	1000	1000	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Fluorene	1000	1000	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Indeno(1,2,3-cd)Pyrene	7	7	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Naphthalene	4	500	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Phenanthrene	10	500	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---
Pyrene	1000	1000	---	0.84 U	---	1.15 U	1.07 U	---	0.70 U	---	---	0.41 U	---	---	---

Notes:
1. mg/kg = milligrams per kilogram
2. bold type = detected constituents
3. shaded cells = MCP standard exceeded
4. U = not detected above laboratory limits
5. --- = sample not analyzed for this constituent
6. Where no Cr6+ data is available, all chromium assumed to be Cr3+

Table 2-1
2018 Carbonizer Trench, Carbonizer Lagoon, and Tail Race Analytical Results
Former Buckley & Mann Site
Norfolk, Massachusetts

SITE AREA			TAIL RACE			
LOCATION			TRSS-1	TRSS-2	TRSS-3	TRSS-4
SAMPLING DATE			3/12/18	3/12/18	3/12/18	3/12/18
SAMPLE DEPTH (FT BGS)			0-1	0-1	0-1	0-1
MCP METHOD 1 STANDARDS	S-1/GW-1	S-1/GW-3				
Metals (mg/kg)						
Antimony	20	20	0.77 U	1.51	1.02 U	0.89 U
Arsenic	20	20	4.83	3.99	3.97	3.70
Barium	1000	1000	30.4	55.7	55.1	40.7
Beryllium	90	90	0.39	0.48 U	0.51 U	0.44 U
Cadmium	70	70	2.66	2.78	6.05	3.43
Chromium (III)	1000	1000	29.1	28.0	15.5	18.9
Chromium (VI)	100	100	1.0 U	1.0 U	2.0 U	1.0 U
Lead	200	200	30.6	110	16.7	14.4
Mercury	20	20	0.082 U	0.487	0.108 U	0.087 U
Nickel	600	600	32.5	37.2	29.7	10.7
Selenium	400	400	0.77 U	0.96 U	1.02 U	0.89 U
Silver	100	100	0.39 U	0.48 U	0.51 U	0.44 U
Thallium	8	8	0.156 U	0.194 U	0.205 U	0.179 U
Vanadium	400	400	20.2	24.2	17.2	18.0
Zinc	1000	1000	50.5	56.2	45.6	61.7
Extractable Petroleum Hydrocarbons (mg/kg)						
C11-C22 Aromatics			15.7 U	---	---	18.0 U
C11-C22 Aromatics, Adjusted	1000	1000	15.7 U	---	---	18.0 U
C9-C18 Aliphatics	1000	1000	15.7 U	---	---	18.0 U
C19-C36 Aliphatics	3000	3000	15.7 U	---	---	18.0 U
2-Methylnaphthalene	0.7	300	0.39 U	---	---	0.45 U
Acenaphthene	4	1000	0.39 U	---	---	0.45 U
Acenaphthylene	1	10	0.39 U	---	---	0.45 U
Anthracene	1000	1000	0.39 U	---	---	0.45 U
Benzo(a)anthracene	7	7	0.39 U	---	---	0.45 U
Benzo(a)pyrene	2	2	0.39 U	---	---	0.45 U
Benzo(b)fluoranthene	7	7	0.39 U	---	---	0.45 U
Benzo(ghi)perylene	1000	1000	0.39 U	---	---	0.45 U
Benzo(k)fluoranthene	70	70	0.39 U	---	---	0.45 U
Chrysene	70	70	0.39 U	---	---	0.45 U
Dibenzo(a,h)anthracene	0.7	0.7	0.39 U	---	---	0.45 U
Fluoranthene	1000	1000	0.39 U	---	---	0.45 U
Fluorene	1000	1000	0.39 U	---	---	0.45 U
Indeno(1,2,3-cd)Pyrene	7	7	0.39 U	---	---	0.45 U
Naphthalene	4	500	0.39 U	---	---	0.45 U
Phenanthrene	10	500	0.39 U	---	---	0.45 U
Pyrene	1000	1000	0.39 U	---	---	0.45 U

Notes:
1. mg/kg = milligrams per kilogram
2. bold type = detected constituents
3. shaded cells = MCP standard exceeded
4. U = not detected above laboratory limits
5. --- = sample not analyzed for this constituent
6. Where no Cr6+ data is available, all chromium assumed to be Cr3+

Table 3-1
Summary of Proposed Soil/Sediment Sampling Program
Former Buckley & Mann Site
Norfolk, Massachusetts
RTN 2-3000173

Site Area #	Sample ID	MCP 14 Metals	PAHs	EPH	TOC	pH	Hex Chrom.
Lagoon 1	L1SS-01	1	1	1	1	1	1
Lagoon 1	L1SS-02	1	1	1	1	1	
Lagoon 2	L2SS-01	1	1	1	1	1	1
Lagoon 2	L2SS-02	1	1	1	1	1	
Lagoon 3	L3SS-01	1	1	1	1	1	1
Lagoon 3	L3SS-02	1	1	1	1	1	
Historical Soil Pile 3	HSP3-01-0001	1	1	1			
Historical Soil Pile 3	HSP3-01-0103	1	1	1			
Historical Soil Pile 3	HSP3-02-0001	1	1	1			
Historical Soil Pile 3	HSP3-02-0103	1	1	1			
Historical Soil Pile 5	HSP5-01-0001	1	1	1			
Historical Soil Pile 5	HSP5-01-0103	1	1	1			
Historical Soil Pile 5	HSP5-02-0001	1	1	1			
Historical Soil Pile 5	HSP5-02-0103	1	1	1			
Historical Soil Pile 6	HSP6-01-0001	1	1	1			
Historical Soil Pile 6	HSP6-01-0103	1	1	1			
Historical Soil Pile 6	HSP6-02-0001	1	1	1			
Historical Soil Pile 6	HSP6-02-0103	1	1	1			
Carbonizer Lagoon	CLSS-13	1		1	1	1	
Carbonizer Lagoon	CLSS-14	1		1	1	1	
Carbonizer Trench	CTSS-07	1		1	1	1	
Tail Race	TRSS-05	1	1	1	1	1	1
Tail Race	TRSS-06	1	1	1	1	1	
Tail Race	TRSS-07	1	1	1	1	1	
Mill River	MRSD-01	1	1	1	1	1	1
Mill River	MRSD-02	1	1	1	1	1	
Mill River	MRSD-03	1	1	1	1	1	
Bush Pond	BPSD-01	1	1	1	1	1	1
Bush Pond	BPSD-02	1	1	1	1	1	
Bush Pond	BPSD -03	1	1	1	1	1	
Total:		30	27	30	18	18	6

Table 3-2
Summary of Proposed Surface Water Sampling Program
Former Buckley & Mann Site
Norfolk, Massachusetts
RTN 2-3000173

Site Area #	Sample ID	MCP 14 Metals	PAHs	EPH	pH	Hex Chrom.
Lagoon 1	L1SW-01	1	1	1	1	
Lagoon 1	L1SW-02	1	1	1	1	
Lagoon 2	L2SW-01	1	1	1	1	
Lagoon 2	L2SW-02	1	1	1	1	
Lagoon 3	L3SW-01	1	1	1	1	
Lagoon 3	L3SW-02	1	1	1	1	
Tail Race	TRSW-01	1	1	1	1	
Tail Race	TRSW-02	1	1	1	1	
Tail Race	TRSW-03	1	1	1	1	
Mill River	MRSW-2-01	1	1	1	1	
Mill River	MRSW-2-02	1	1	1	1	
Mill River	MRSW-3-02	1	1	1	1	
Bush Pond	BPSW-01	1	1	1	1	
Bush Pond	BPSW-02	1	1	1	1	
Bush Pond	BPSW-03	1	1	1	1	
Total:		15	15	15	15	0

Table 3-3
Summary of Proposed Groundwater Sampling Program
Former Buckley & Mann Site
Norfolk, Massachusetts
RTN 2-3000173

Well #	Sample ID	MCP 14 Metals	PAHs	EPH	pH	VOCs
EW-1	L1SW-01	1	1	1	1	1
EW-2	L1SW-02	1	1	1	1	1
MW-2	L2SW-01	1	1	1	1	1
MW-3	L2SW-02	1	1	1	1	1
MW-5	L3SW-01	1	1	1	1	1
MW-6	L3SW-02	1	1	1	1	1
Total:		6	6	6	6	6

FIGURES

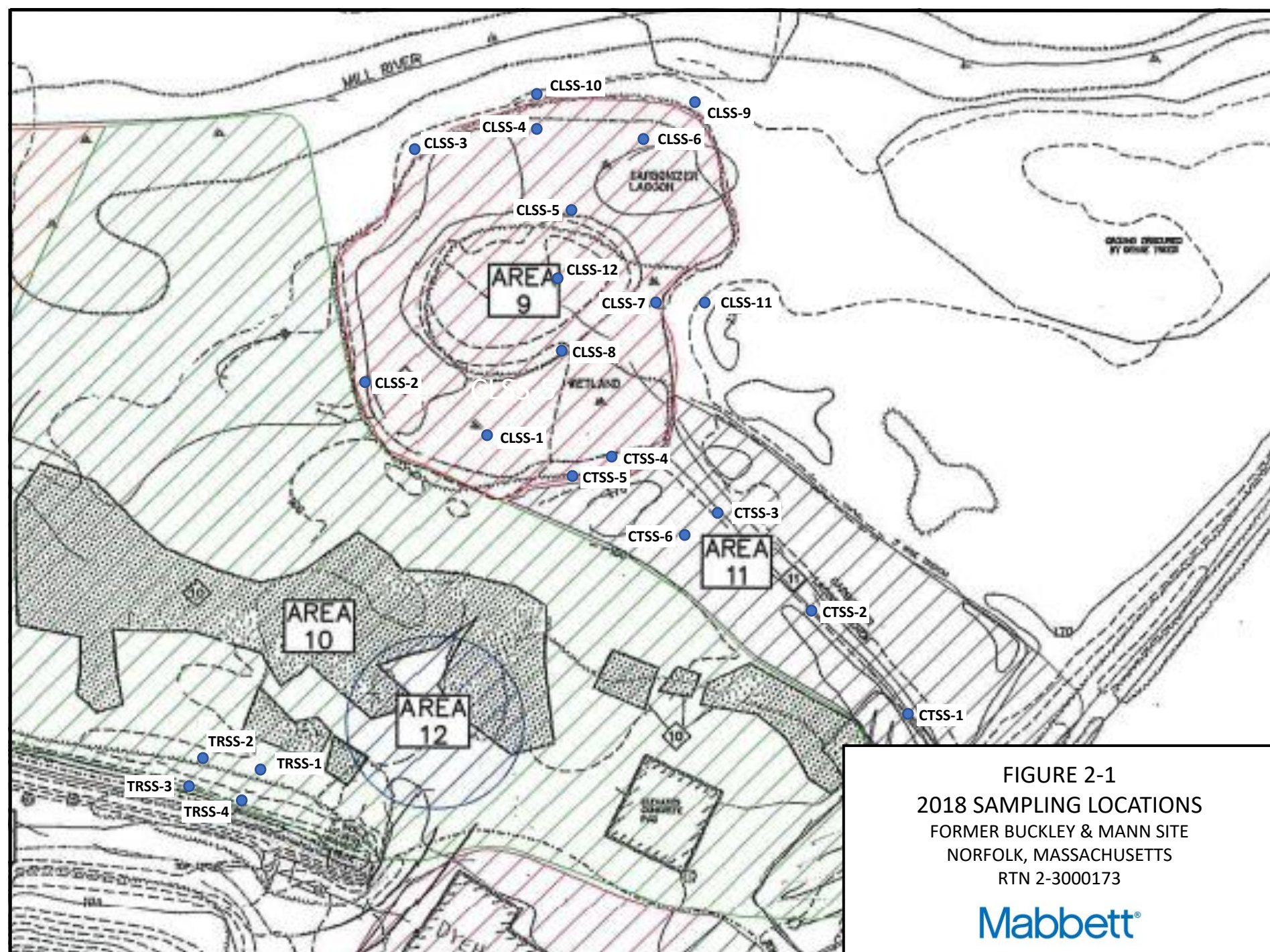


FIGURE 2-1
2018 SAMPLING LOCATIONS
FORMER BUCKLEY & MANN SITE
NORFOLK, MASSACHUSETTS
RTN 2-3000173

