August 17, 2018

Mrs. Becky Blais  
Maine Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333

RE: Phase II Environmental Site Assessment Scope of Work  
Bear Paw, 64 Norway Road, Waterford, Maine

Dear Becky:

Beacon Environmental Consultants, LLC (Beacon) was retained by the Maine Department of Environmental Protection (MEDEP) to prepare this Phase II Environmental Site Assessment (ESA) Scope of Work (SOW) for the Bear Paw property located at 64 Norway Road in Waterford, Maine (Site). See Figure 1 for a Site Location Map.

SITE DESCRIPTION AND HISTORY

The Subject Property consists of approximately 12 acres and is developed with an approximately 11,142 square-foot commercial sawmill building, an approximately 1,198 square foot shop building, an approximately 512 square foot office building, an approximately 289 square foot fire suppression building, a 36 square foot shed, and a 200 square foot bathroom structure. The ground surface at the site slopes to the north to the Crooked River and to the center of the Site to an unnamed stream. Groundcover consists primarily of vegetated areas, gravel areas for storage of wood, concrete slabs, and structures. The subject property can be accessed from the south via Norway Road (Route 118).

The area surrounding the site is primarily undeveloped to the south and east and residential to the west and to the north across the Crooked River.

Historical information identifying the past site use was obtained from a variety of sources and included: Title Records, City Directories, Aerial Photographs, Sanborn Fire Insurance Maps, and Topographic Maps.

<table>
<thead>
<tr>
<th>Period</th>
<th>Property Uses</th>
<th>Surrounding Area Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 1921</td>
<td>Grist Mill</td>
<td>Undeveloped</td>
</tr>
<tr>
<td>1921-1960s</td>
<td>North Waterford Spool Company</td>
<td>Residential and undeveloped</td>
</tr>
<tr>
<td>1960s-1990s</td>
<td>Lumber yard and sawmill</td>
<td>Residential and undeveloped</td>
</tr>
<tr>
<td>1990s-Present</td>
<td>Unoccupied</td>
<td>Residential and undeveloped</td>
</tr>
</tbody>
</table>

PREVIOUS ENVIRONMENTAL REPORTS


Field Services, Inc. (FSI) completed a limited assessment in conjunction with the removal of one 2,000-gallon gasoline underground storage tank (UST) at the Site. The UST was installed in 1981 and was utilized by Bear Paw to fuel company vehicles.
On October 20, 1995, FSI oversaw Kennaugh & Sons Excavating remove the UST. Corrosion and product staining were observed on the bottom of the UST but no impacts were observed in soil screening sample results.

Based on the minor petroleum-related impacts observed, FSI did not recommend additional investigation.

*Phase I ESA, Beacon, July 2018*

Beacon performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Bear Paw property located at 64 Norway Road, Waterford, ME 04088.

This assessment revealed the following Recognized Environmental Conditions in connection with the property:

- Unsecured drums, containers, and pails of potentially hazardous materials and petroleum products on-site;
- Staining on concrete and soil on-site; and
- Past usage of the property as a grist mill, timber yard, and sawmill.

This assessment revealed the following Historic Recognized Environmental Conditions in connection with the property:

- One 2,000-gallon gasoline UST was removed from the property in 1995.

This assessment did not reveal Controlled Recognized Environmental Conditions in connection with the property.

This assessment revealed the following environmental conditions in connection with the property:

- Asbestos-containing materials (ACM), Lead-Based Paint (LBP), and/or Polychlorinated Biphenyls (PCBs) may be present within building components.

**CONCEPTUAL SITE MODEL**

**Physical Setting**

Based on a review of the 2014 USGS topographic map for the site area, the site is located at approximately 536 feet above mean sea level and groundwater is inferred to flow to the northeast toward the Crooked River.

The nearest surface water in the vicinity of the Property is an unnamed stream located in the center of the property transecting from the Crooked River to the north to the south.

**Geology**

Based on the Surficial Geology Map of the North Waterford Quadrangle, Maine (Thompson, 2014), the property is underlain by stream alluvium of the Holocene Epoch. These deposits are comprised of sand, gravel, silt, and organic sediment deposited on flood plains of modern streams. Unit may include some wetland areas.

Based on the Bedrock Geology Map of Maine (Osmer, Hussey, and Boone, 1985), the Site is underlain by the Sebago Pluton. The Sebago pluton is a two-mica granite that intruded the metasedimentary rocks of the Central Maine Terrain during the Carboniferous Period.
Hydrology

The Crooked River located northeast of the subject property is designated as a third order stream and tributary to Sebago Lake. The subject property is in close proximity to the watershed and general topography would cause a surface discharge to migrate towards the watershed. Groundwater connectivity likely exists with the river allowing for migration of subsurface contaminants to enter the watershed.


The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map #230017 C1182D dated July 7, 2009 indicates the north and northwestern portions of the Site are within the regulatory floodway.

According to the United States Fish and Wildlife Service Wetlands Mapper database, a riverine wetland is located on the northeastern portion of the subject property. Additionally, a stream transects the center of the property from north to south.

SOURCE AREAS

The following source areas were identified at the Site based on the previous investigations and the findings of the July 2018 Phase I ESA:

- One former 2,000-gallon gasoline UST with documented corrosion
- Staining on soil
- Staining within structures
- Disturbed soil piles
- Ash from building fires
- Site building components

CONTAMINANTS OF CONCERN

Based on the above source areas, associated current Contaminants of Concern (COCs) include the following:

- PAHs
- Volatile Organic Compounds (VOCs)
- Lead
- Extractable petroleum hydrocarbons (EPH)
- Volatile petroleum hydrocarbons (VPH) ranges only
- PCBs
- Asbestos, PCB-containing building materials, and lead paint
- Other universal and regulated wastes

NATURE AND EXTENT

Background

To determine if off-site releases have impacted on-site soils, groundwater, or pore water, one soil boring, monitoring well, and pore water location will be completed at the most upgradient location permissible. Surficial soil and subsurface soil will be sampled for PAHs, VOCs, total lead, EPH,
VPH ranges only, and PCBs. Groundwater and pore water will be sampled for PAHs, VOCs, total lead, EPH, and VPH ranges only.

The inferred extent of COCs based on currently available data is as follows:

**EPH, VPH, VOCs and Lead**

A fueling area was located along the southwestern Site boundary, which was supplied by one 2,000-gallon unleaded gasoline UST. Petroleum contamination was encountered in 1995 during removal of this tank but did not exceed 1 part per million (ppm) on a Photoionization Detector (PID). Neither soil nor groundwater samples were collected during the assessment of this UST. Therefore, EPH, VPH, VOCs, and total lead are considered COCs in subsurface soils and groundwater in this area as well and assessment of the extent of petroleum using current analytical methods remains a data gap.

A dug well was observed to the south of the bathroom building. As there is currently no power connected to the well pump a sample should be collected following the **MEDEP SOP DS#002 Groundwater Sample Collection for Site Investigation and Assessment Monitoring**.

Staining was observed on soils and within Site buildings. Some of these stains are of an unknown origin while others are associated with containers of known contents. Therefore, EPH, VPH, VOCs, and total lead are considered COCs in subsurface soils and groundwater in these areas using current analytical methods remains a data gap. Sample collection will be completed following MEDEP SOP.

The presence of the Crooked River to the north and the unnamed stream that transects the property represent potential receptors for impacted groundwater. Therefore, EPH, VPH, VOCs, and total lead are considered COCs in pore water in these areas using current analytical methods remains a data gap.

**PAHs, Lead, and PCBs**

The eastern portion of the Saw Mill building was destroyed by fire between 2008 and 2011. Based on the unknown nature of the building materials, PAHs, Lead, and PCBs may be within the ash from the fire and may have leached into groundwater in this area.

**Hazardous Building Materials (asbestos, PCBs, and lead) and Universal and Other Regulated Waste**

Given the age of the Site buildings, it is likely that hazardous building materials are present at the Site in the form of ACM, PCB-containing building materials, and lead in paint. These hazardous building materials are therefore considered COCs for the Site building. Beacon completed a Potentially Hazardous Building Materials Investigation (PHBMI) as a portion of the Phase I ESA. This PHBMI identified universal and other regulated wastes on the property, therefore a thorough sampling of these items should be conducted for the Site buildings.

**Equipment Decontamination and Management of Investigation Derived Waste (IDW)**

Powdered alconox will be used as a decontamination agent. Investigation Derived Waste (IDW) will be managed as follows:

- Any excess soil generated during sampling will be backfilled.
- Groundwater and pore water will be discharged in the same area as the sampling point.
If free product is encountered, it will be contained for off-site disposal.

See Table 1 for MEDEP Standard Operating Procedures (SOPs) to be employed during field sampling.

See Figure 2 for the Proposed Sample Locations.

**SCOPE OF WORK**

Based on the identified data gaps in the above conceptual Site model, Beacon has prepared the scope of work provided in the attached Table 2.

Please feel free to contact me with any questions.

Sincerely,

BEACON ENVIRONMENTAL CONSULTANTS, LLC

John K. Cressey, CG, PG
President

Attachments
TABLES
<table>
<thead>
<tr>
<th>SOP #, Title, Revision Date</th>
<th>Originating Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR#002 - Groundwater Sample Collection for Site Investigation and Assessment Monitoring, April 2015</td>
<td>MEDEP</td>
</tr>
<tr>
<td>DR#006 - Protocol for Collecting Soil Samples, April 2015</td>
<td>MEDEP</td>
</tr>
<tr>
<td>DR#009 - Microwell Installation Protocol, April 2015</td>
<td>MEDEP</td>
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<tr>
<td>DR#011 - Field Screening of Soil Samples Utilizing Photoionization and Flame-ionization Detectors, April 2015</td>
<td>MEDEP</td>
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<td>DR#012 - Chain of Custody Protocol, April 2015</td>
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<tr>
<td>DR#013 - Documentation of Field Activities and Development of a Trip Report, April 2015</td>
<td>MEDEP</td>
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<tr>
<td>DR#016 - Requirements for the Development of a Site Specific Quality Assurance Project Plan, April 2015</td>
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<td>DR#017 - Equipment Decontamination Protocol, April 2015</td>
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<tr>
<td>DR#023 - Protocol for Groundwater/Surface Water Interface Sampling Using a Pore Water Sampler, April 2015</td>
<td>MEDEP</td>
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<td>TS004 - Compendium of Field Testing of Soil Sampling for Gasoline and Fuel Oil, October 2012</td>
<td>MEDEP</td>
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<tr>
<td>E1903-11 - Standard Practice for Environmental Site Assessments, Phase II Environmental Site Assessment Process, July 2011</td>
<td>ASTM</td>
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<td>Chapter 495 - Asbestos Management Regulations, February 2011</td>
<td>MEDEP</td>
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## TABLE 2
PROPOSED SAMPLING PLAN
BEAR PAW, 64 NOHWAY ROAD, WATERFORD, MAINE

<table>
<thead>
<tr>
<th>SAMPLE LOCATION/SOURCE AREA</th>
<th>TASK/MEDIA</th>
<th>SAMPLE IDS</th>
<th>DEPTH OF SAMPLE</th>
<th>ANALYTICAL PARAMETERS</th>
<th>NUMBER OF LAB SAMPLES</th>
<th>NUMBER OF DUPLICATES</th>
<th>RATIONALE</th>
<th>FIELD ANALYSES/OBSERVATIONS</th>
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<tbody>
<tr>
<td>BACKGROUND</td>
<td>SURFICIAL SOIL</td>
<td>BKSS-01</td>
<td>0-2'</td>
<td>PAHs, PCBs, EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>0</td>
<td>To assess background conditions</td>
<td>PID Field-Screening, Visual Observations</td>
</tr>
<tr>
<td></td>
<td>SUBSURFACE SOIL</td>
<td>BKB-01</td>
<td>Greatest observed contamination or groundwater interface</td>
<td>PAHs, PCBs, EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>0</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GROUNDWATER</td>
<td>BKMW-01</td>
<td>Screened interval</td>
<td>PAHs, EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>0</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
<td></td>
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<tr>
<td></td>
<td>PORE WATER</td>
<td>BKPW-01</td>
<td>6&quot; Below surface water interface</td>
<td>PAHs, EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>0</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
<td></td>
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<tr>
<td>DUG WELL</td>
<td>GROUNDWATER</td>
<td>DW-01</td>
<td>Within the dug well</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>1</td>
<td>To assess groundwater within the dug well</td>
<td>Visual Observations, Conductivity, Turbidity</td>
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<tr>
<td>FORMER UST</td>
<td>SUBSURFACE SOIL</td>
<td>B-03</td>
<td>Greatest observed contamination or groundwater interface</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>1</td>
<td>To assess subsurface soils in the former UST location</td>
<td>PID Field-Screening, Visual Observations</td>
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<tr>
<td></td>
<td>GROUNDWATER</td>
<td>MW-03</td>
<td>Screened interval</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>1</td>
<td>1</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
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</tr>
<tr>
<td>STAINED/DISTURBED SOIL LOCATIONS</td>
<td>SURFICIAL SOIL</td>
<td>B-02, B-04, B-07</td>
<td>0-2'</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>3</td>
<td>0</td>
<td>To assess surficial soils in disturbed areas</td>
<td>PID Field-Screening, Visual Observations</td>
</tr>
<tr>
<td></td>
<td>SUBSURFACE SOIL</td>
<td>B-02, B-04, B-07</td>
<td>Greatest observed contamination or groundwater interface</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>3</td>
<td>0</td>
<td>PID Field-Screening, Visual Observations</td>
<td></td>
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<tr>
<td></td>
<td>GROUNDWATER</td>
<td>MW-02, MW-04, MW-07</td>
<td>Screened interval</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>3</td>
<td>0</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
<td></td>
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<tr>
<td>DESTROYED BUILDINGS</td>
<td>SURFICIAL SOIL</td>
<td>B-05, B-06, B-13</td>
<td>0-2'</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>5</td>
<td>1</td>
<td>To assess surficial soils in former building locations</td>
<td>PID Field-Screening, Visual Observations</td>
</tr>
<tr>
<td></td>
<td>SUBSURFACE SOIL</td>
<td>B-05, B-06, B-13</td>
<td>Greatest observed contamination or groundwater interface</td>
<td>PAHs, PCBs, Lead</td>
<td>3</td>
<td>0</td>
<td>PID Field-Screening, Visual Observations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GROUNDWATER</td>
<td>MW-05, MW-06</td>
<td>Screened interval</td>
<td>PAHs, Lead</td>
<td>2</td>
<td>1</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
<td></td>
</tr>
<tr>
<td>SITEWIDE</td>
<td>SURFICIAL SOIL</td>
<td>B-08, B-09, B-10, B-11, B-12, B-14</td>
<td>0-2'</td>
<td>PAHs, PCBs, Lead</td>
<td>3</td>
<td>0</td>
<td>To assess surficial soils sitewide</td>
<td>PID Field-Screening, Visual Observations</td>
</tr>
<tr>
<td></td>
<td>SUBSURFACE SOIL</td>
<td>B-08, B-09, B-10, B-11, B-12, B-14</td>
<td>Greatest observed contamination or groundwater interface</td>
<td>EPH, VPH ranges, VOCs, Lead</td>
<td>3</td>
<td>0</td>
<td>PID Field-Screening, Visual Observations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PORE WATER</td>
<td>PW-02, PW-03, PW-04, PW-05, PW-06, PW-07, PW-08</td>
<td>6&quot; Below surface water interface</td>
<td>PAHs, EPH, VPH ranges, VOCs, Lead</td>
<td>7</td>
<td>1</td>
<td>Visual Observations, Conductivity, Turbidity, DO</td>
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<td>BUILDING COMPONENTS</td>
<td>AS NEEDED</td>
<td>NA</td>
<td>Asbestos, PCBs, Lead</td>
<td>AS REQUIRED</td>
<td>AS REQUIRED</td>
<td>To assess building materials</td>
<td>Visual Observations</td>
<td></td>
</tr>
</tbody>
</table>

BEACON ENVIRONMENTAL CONSULTANTS, LLC
FIGURES
FIGURE 1 - STREET MAP

BEAR PAW
64 Norway Road
Waterford, Maine 04088

PREPARED FOR: MEDEP
PROJ. MGR: DATE: 6/14/2018
DRAWN BY: John Cressey, CG, PG PROJ. #: BE-110
FIGURE 2 – PROPOSED SAMPLE LOCATIONS
BEAR PAW, 64 NORWAY ROAD, WATERFORD, ME

August 7, 2018
Drawn By: JKC

Soil Boring/Groundwater Sample Location

Soil Boring Location

Pore Water Sample Location