Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation
Research Building - Former Great Northern Paper Company
1 Katahdin Avenue, Millinocket, Maine
October 14, 2020

Prepared by Our Katahdin

I. Introduction & Background

a. Site Location

The Subject Property is the former Great Northern Paper Company's (GNP's) Research Building, which is located at 1 Katahdin Avenue in the Town of Millinocket, Penobscot County, Maine (herein referred to as "the Site"). The Research Building is a portion of, and located within, the northern portion of the former GNP Millinocket paper mill complex.

b. Previous Site Use(s) and any previous cleanup/remediation

Much of the building was constructed on a concrete foundation with no basement sometime in the 1960s. The building has reportedly been unoccupied since 2008. This building was utilized as the research and testing center for the GNP mill since.

c. Site Assessment Findings

In support of Our Katahdin's proposed redevelopment of the GNP Site, a Phase I Environmental Site Assessment (ESA) was completed by Ransom Consulting, LLC (Ransom) in November of 2019. The Phase I ESA did not identify any "Recognized Environmental Conditions" (RECs) as defined by ASTM International Standard E 1527-13 in connection with the Research Building. However, the potential presence of urban fill and historic releases of hazardous substances and petroleum (HSP) at the former GNP Millinocket paper mill complex were identified as a Site-wide REC for the property, including the Research Building. Therefore, the MEDEP-approved, Soil Management Plan must be followed if contaminated soils are encountered or otherwise disturbed at the Site during earthwork-related activities (not anticipated as part of this project).

In May 2019, a Hazardous Building Materials Inventory (HBMI) of the Research Building was completed by the Nobis Group of Concord, New Hampshire (Nobis) as part of a Targeted Brownfields Assessment (TBA), on behalf of the United States Environmental Protection Agency (U.S. EPA). The 2019 Nobis HBMI identified the following hazardous building materials that may need to be abated and/or properly disposed of as part of Site redevelopment: Asbestos containing building materials (ACM); Poly-chlorinated biphenyl (PCB) containing building materials and fixtures; Lead-based paint (LBP); Mercury containing equipment (thermostats, switches, etc.) and other universal wastes; and potentially hazardous levels of mold.

In October 2019, Ransom completed a Peer Review and Data Gap Evaluation of the 2019 Nobis HBMI. The Nobis HBMI is presented as a Pre-Demolition Impact Survey,

fully compliant with U.S. EPA and MEDEP inspection and sampling protocols, and sufficient to prepare final abatement specifications and remediation designs, for demolition or complete renovation. The intent of Ransom's review was to evaluate the Nobis HBMI for data gaps due to inspection or sampling limitations, materials not sampled, potential ambiguities in the nature or quantities of hazardous building materials identified, reporting deficiencies etc. Based on our review of Nobis' HBMI report and the results of our own Site reconnaissance, Ransom concluded that the Nobis' HBMI report was generally satisfactory as a Pre-Demolition Impact Survey; however, Ransom identified the following items which may require clarification prior to developing final abatement designs and cost estimates: 1) Nobis' estimate of ACM pipe insulation and associated fittings may be low relative to the total quantities of piping observed during Ransom's reconnaissance; and 2) Nobis concluded that the entirety of the drywall within the building had ACM backing/mastic and ACM joint compound; however, this conclusion was based on a single data point, which may not be sufficient to characterize the entire building.

d. Project Goal (site reuse plan)

The overall redevelopment plan for the Research Building is to serve as the centerpiece for the next generation of research, development and innovation on Our Katahdin's renewed industrial site in Millinocket. The goal is for the Research Building to be home to companies investing in research and development of innovative new forest products technologies, capitalizing on the Site's proximity to wood, water, rail, road, affordable hydropower and other industrial infrastructure.

e. Regional and Site Vulnerabilities

According to the United States Global Change Research Program, trends for the northeast region of the United States include increased temperatures, increased precipitation with greater variability, increased extreme precipitation events, and rises in sea level. According to Federal Emergency Management Agency (FEMA) Flood Zone Map 2301110005B, the Research Building is not located within a 100-year flood zone; as such, increased precipitation that may affect flood waters and stormwater runoff, as well as rising sea levels, are not applicable to the site.

Based on the nature of the Site and its proposed reuse, changing temperature, changing dates of ground thaw/freezing, changing ecological zone, saltwater intrusion and changing groundwater table are not likely to significantly affect the Site.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility

Our Katahdin will hire a qualified environmental professional (QEP) to oversee and document the cleanup in accordance with local, State, and Federal requirements. In addition, all documents prepared for the Research Building will be submitted to the MEDEP Voluntary Response Action Program (VRAP).

b. Cleanup Standards for Major Contaminants

Soil: The Research Building is proposed to be renovated for industrial use. As such, the MEDEP Remedial Action Guidelines (RAGs) for the "Commercial Worker" exposure

scenario are applicable to soils within the 0 to 2-foot interval that may be disturbed at exterior areas of the Research Building during redevelopment. In addition, potential exposure risks also exist for construction workers during future earthwork activities at exterior areas of the Research Building. Therefore, "Excavation/Construction Worker" scenarios also apply to soils in the subsurface (deeper than 2 feet below grade). Therefore, the MEDEP-approved, Soil Management Plan must be followed if contaminated soils are encountered or otherwise disturbed at the Site during earthwork-related activities. It should be noted that earthwork is not anticipated as part of this project.

Asbestos: MEDEP Chapter 425 stipulates that all friable asbestos-containing materials as well as non-friable asbestos-containing materials that are in poor condition be removed or otherwise appropriately abated before it is disturbed during any renovation or demolition activity.

Lead-Based Paint: Handling of components coated with lead-containing paint *at any concentration* requires compliance with the Occupational Safety and Health Administration (OSHA) lead standard (*Lead in Construction*, 29 CFR 1926.62). Cleanup and abatement activities, such as lead removal, stabilization and encapsulation, should be completed to meet OSHA, MEDEP, and U.S. EPA regulatory requirements, and to eliminate lead exposure to contractors and current and future Site users.

PCBs: U.S. EPA has established a threshold value of 50 milligrams per kilogram (mg/kg) for PCBs, above which materials are considered "Unauthorized Use" of PCBs and require removal and disposal as PCB Bulk Product Waste, under 40 CFR 761.3. Materials testing below 50 mg/kg PCBs may be considered Excluded PCB Products, provided they are not the result of contamination by a Bulk Product Waste. Excluded PCB Product waste may be disposed of at any licensed solid waste management or recycling facility permitted to accept low-level PCBs. We understand that on recent, similar projects MEDEP VRAP has requested removal and disposal of materials approaching 50 mg/kg, as a conservative risk-reduction measure; this will occur as part of OK's redevelopment and reuse of the Research Building

Mold: While there are no regulatory assessment limits or cleanup values under U.S. EPA or MEDEP, proper site controls, worker protection and waste handling methods will need to be implemented during removal and disposal of mold-impacted materials to protect future Site users.

Universal Wastes: Used or non-functional universal waste is required to be disposed or recycled off-site in accordance with MEDEP's Solid Waste regulations.

c. Laws & Regulations Applicable to the Cleanup

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, MEDEP environmental laws, and local Millinocket by-laws and ordinances. Federal, State, and local laws regarding procurement of contractors to conduct the cleanup will be followed. Our Katahdin will competitively bid and retain a qualified

environmental professional, in accordance with the competitive procurement provisions of 40 CFR Part 31.36. In addition, all appropriate permits (e.g., notify before you dig, State notifications/permits) will be obtained prior to the work commencing.

III. Evaluation of Cleanup Alternatives

a. Cleanup Alternatives Considered

To address hazardous building materials identified at the Research Building, three different cleanup alternatives were evaluated, as detailed below:

- Alternative #1: No Action.

- Alternative #2: Targeted Hazardous Building Materials Removal with Partial Management In-Place Alternative. This alternative includes:

  - Removal of all identified asbestos-containing materials *except* the large-unit exterior window banks, which would be retained for ongoing re-use.

  - All caulks and paints identified as unauthorized use of PCBs, i.e. >50 mg/kg PCBs, would be properly removed and disposed as PCB bulk product waste (including one caulk which tested 49 mg/kg).

  - All identified universal waste items would be properly removed and recycled or disposed.

  - LBP would be abated in specific locations, to allow for torch cutting or grinding to facilitate interior demolition.

  - Mold impacts would be addressed by gutting the building, which would include removal of all organic materials currently acting as a host and food source for microbial growth.

  - Surfaces coated with LBP and/or PCB-containing paints below 50 mg/kg (Excluded PCB Products) would be stabilized via scraping of loose, flaking, and chipping paint, and encapsulated beneath subsequent paint layers.

  - Exterior windows with ACM caulk would be repaired as needed and maintained in good condition, such that they do not pose a fiber release risk.

  - ACM and PCB materials left in place would be managed under an Operation & Maintenance (O&M) program during future re-use. The O&M program would require periodic surveillance of encapsulated materials, and outline best work practices during future renovation/disturbance, etc.

- Alternative #3: Full Hazardous Building Materials Abatement. This alternative involves the proper removal, transport, and offsite disposal of all identified hazardous building materials identified at the Research Building, including all AMC, all caulks and paints with PCB concentrations greater than 1 mg/kg, all identified LBP and universal wastes, and gut cleanout of the Research Building such that the building is reduced to structural members only.

b. Cost Estimate of Cleanup Alternatives

To satisfy U.S. EPA requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

Effectiveness – Including Vulnerability/Resiliency Considerations

- Alternative #1: The No Action alternative is not effective in controlling or preventing the exposure of future receptors to hazardous building materials at the Site; nor is it protective of human health and the environment.

- Alternative #2: Targeted removal of hazardous building materials with partial management in-place is an effective way to significantly reduce the potential risk of exposure to future site visitors and/or occupants.

- Alternative #3: Full hazardous building materials abatement is an effective way to eliminate the potential risk of exposure to future site visitors and/or occupants by removing all hazardous building materials from the Site.

Implementability

- Alternative #1: No Action is easy to implement since no actions will be conducted.

- Alternative #2: Targeted removal of hazardous building materials with partial management in-place for remaining hazardous building materials is relatively easy to implement. The necessary services and materials to complete the remedial tasks are readily available, including the necessary equipment and contractors. However, this alternative would require periodic surveillance of encapsulated materials and an outline of best work practices to be adhered to during future renovation or disturbance in accordance with a MEDEP-approved O&M program.

- Alternative #3: Full hazardous building materials abatement is relatively easy to implement. The necessary services and materials to complete the remedial tasks are readily available, including the necessary equipment and contractors.

Cost

- There will be no costs under Alternative #1: No Action.
- It is estimated that Alternative #2 will be on the order of $XXXX. See Table 1 for an estimate of remedial costs.
- Alternative #3 is estimated to cost roughly $XXXX. See Table 2 for an estimate of remedial costs.

c. Recommended Cleanup Alternative

The recommended cleanup alternative is Alternative #2: Targeted Hazardous Building Materials Removal with Partial Management In-Place. This alternative is practical, implementable, and effective in protecting human health and the environment. It is also an effective way to prevent future receptors from coming into direct contact with hazardous building materials.

Alternative #1 cannot be recommended since it does not address site risks and Alternative #3 is cost prohibitive.

d. Green and Sustainable Remediation Measures for Selected Alternative

To make the selected alternative greener, or more sustainable, several techniques are planned. The most recent Best Management Practices (BMPs) issued under ASTM Standard E-2893: Standard Guide for Greener Cleanups will be used as a reference in this effort. Our Katahdin will require the cleanup contractor to follow an idle-reduction policy and use heavy equipment with advanced emissions controls operated on ultra-low sulfur diesel. The excavation work would be conducted during the dry-weather months (summertime) in order to minimize groundwater infiltration into the excavation area, in turn reducing dewatering needs and the amount of dewatering liquids requiring disposal/treatment. The number of mobilizations to the Site would be minimized and erosion control measures would be used to minimize runoff into environmentally sensitive areas. In addition, Our Katahdin plans to ask bidding cleanup contractors to propose additional green remediation techniques in their response to the Request for Proposals for the cleanup contract.