Analysis of Brownfields Cleanup Alternatives (ABCA)

1.0 INTRODUCTION & BACKGROUND

This document provides an Analysis of Brownfields Cleanup Alternatives (ABCA) for the Asa Wood Elementary School property located at 700 Idaho Avenue in Libby, Lincoln County, Montana. Asbestos containing building materials (ACBM), lead-based paint (LBP), and thermostats that contain mercury are present in site buildings (Weston, 2020a). This ABCA is required as a condition of completing the cleanup of hazardous substances using U.S. Environmental Protection Agency (EPA) Brownfields Cleanup Funds.

The site is located in a commercial and residential area in Libby. The site is a former elementary school, which operated from 1953 to 2011, and consists of the school building, paved parking areas, fencing, a gazebo, playground equipment, and a community garden. The 42,200 square-foot school building was constructed in 1953, with additions in 1956, 1960, 1967, and 2015, which included the addition of a commercial kitchen in 2015. The kitchen provides school lunches for the Libby School District during the school year. The site is no longer used as a school but is currently used by various non-profits (Weston, 2020).

As described in the Phase II ESA report prepared by Weston (2020a), the site inspection confirmed 13 building materials positive for asbestos at a concentration above the regulatory limit of one percent asbestos (>1%) by weight, and six (6) materials that were assumed to be ACBM, as follows:

- Carpet Mastic
- Chalkboard
- Fire Doors
- Fire Hose
- Floor Tile
- Floor Tile Mastic
- Mudded Fittings
- Pipe Insulation
- Stair Tread and Mastic
- Vermiculite
- Vibration Dampener
- Window Glazing

Note: The vermiculite will be abated by the Lincoln County Asbestos Recovery Program and is not included in this project or ABCA.

During the Phase II Building Material Inspection, lead-based paint above the Environmental Protection Agency (EPA) action level was confirmed on the interior and exterior of the building. Exterior locations where lead-based paint was found included doors, door frames and jambs, trim, walls, and window frames and sills. Interior locations included doors, door frames and jambs, walls, ceilings, baseboards, and window frames and sills of the boiler room, Wing A, Wing B, and Wing C.

In addition to the asbestos and lead-based paint inspection, Weston (2020a) identified a total of four (4) mercury thermostat switches in the building.

2.0 THREATS TO PUBLIC HEALTH AND/OR THE ENVIRONMENT

Asbestos-containing building materials (ACBM) within the building pose a potential threat to public health during proposed building renovations, or if they deteriorate such that asbestos fibers are released. Exposure to airborne asbestos has been linked to illnesses, including asbestosis (scaring of the lungs), lung cancer, and mesothelioma (a rare cancer of the plural linings if the lung and/or stomach). Federal and state regulations may require air monitoring and controls to limit generation of dust during activities such as sawing, grinding, or sanding. Such activities should be avoided, where possible, to limit potential inhalation of asbestos fibers.

LBP was used in most buildings constructed prior to World War II and until 1978. Regulations enforced by the Consumer Product Safety Commission (CPSC) banned the use of all but small amounts of lead in paints starting in 1978; however, manufacturers are still allowed to produce paints containing up to 600 parts per million lead. LBP is a concern as a source of exposure to lead through ingestion of paint chips or lead in soil, through inhalation of lead in interior dust, or dust produced during renovation or demolition activities.

Mercury is a neurotoxin that can damage the brain and nervous system, even at very low levels (USDA Forest Service, 2018). Exposed mercury from a broken thermostat can become an invisible, odorless toxic vapor (EPA, 2011).

3.0 ENFORCEMENT ACTIVITIES

No environmental enforcement activities have been initiated on the property, and the proposed abatement of asbestos is a voluntary action to support reuse of the site.

4.0 NEED FOR CLEANUP

Asbestos is present in carpet and vinyl floor tiles, chalkboards, fire implements, piping, stairs, and windows. If ACBM is not properly handled prior to planned renovations in accordance with Federal and State regulations, asbestos could be released into the environment. If released, asbestos could be inhaled by individuals working or visiting the building. Asbestos abatement to remove the ACBM would remove this concern and the general threat to public health and/or the environment.

LBP is present on exterior walls, doors, and windows, and interior doors, windows, walls, and trim. This needs to be painted over or removed to avoid lead exposure.

The mercury thermostats present in the boiler room should be removed and properly disposed to avoid exposure.

5.0 CLEANUP OBJECTIVE

The objective of cleanup or abatement is to safely remove and properly dispose of the ACBMs, LBP, and mercury in thermostats associated with the school building without unacceptable risk of exposure to workers and the public.

6.0 ALTERNATIVE ANALYSIS

In accordance with current EPA and Montana Department of Environmental Quality – Asbestos Control Program (MDEQ-ACP) regulations, the ACBMs identified in the building are classified as follows:

- **Regulated ACM (RACM)**: Mudded fittings and pipe insulation.
- **Category I Non-Friable**: Carpet mastic, fire hose, floor tile mastic, stair tread and mastic, and vibration dampener.
- **Category II Non-Friable**: Chalkboard, fire doors, window glazing.

Regulated asbestos-containing material (RACM) should be abated prior to scheduling renovations. Category I and II non-friable ACBMs are not currently regulated by the EPA or MDEQ-ACP. However, the Occupational Safety and Health Administration (OSHA) does regulate these materials.

Three abatement alternatives identified in the table below have been evaluated based on their comparative effectiveness, implementability, and cost.

Criteria	***Alternative 1:*** *No Action*	***Alternative 2:*** *Abate all ACBM, encapsulate all LBP, remove mercury-containing thermostats. Do not abate roofing materials.*	***Alternative 3:*** *Abate all ACBM, encapsulate all LBP, remove mercury-containing thermostats. Abate all roofing materials.*
Effective [1]	Not effective	Effective	Effective
Implementability	High	Moderate (does not include roof)	Moderately (this is the most time and labor intensive)
Cost [2]	$0	$282,176 (approx..)	$396,468 (approx..)

1 – With respect to human health risk reduction.
2 – Costs shown are for abatement and UST removal work only. These costs do not include demolition services.

Alternative 1: No Abatement is cost effective and implementable but results in no reduction of human health risks. This alternative would not protect occupants or renovation workers.

Alternative 2: Abating all ACBMs and RACMs, encapsulating all LBP, and removing the mercury-thermostats is effective concerning risk reduction in the building, moderately implementable, and is less expensive than Alternative 3. However, this Alternative would not effectively meet the developer's goals for the property. The developer wants to re-roof the school, which cannot be done without abating the existing roofing materials.

Alternative 3: Abating ACBM and RACM, encapsulating all LBP, removing the mercury-thermostats, and abating all roofing materials is effective concerning risk reduction in the building, implementable, but is the most expensive option. This would meet the developer's goals for the property, including installing a new roof for the building.

7.0 PROPOSED ACTION

The preferred and proposed action is Alternative 3: Abate all ACBM and RACM, encapsulate all LBP, remove all mercury-containing thermostats, and abate all roofing material. While Alternative 2 may be effective with respect to risk reduction, it does not effectively meet the developer's objectives.

Under Alternative 3, the asbestos abatement project would be completed by asbestos trained professionals in accordance with the EPA National Emission Standards for Hazardous Pollutants (NESHAP) regulation (40 CFR 61, Subpart M) and the State of Montana, Administrative Rules of Montana (ARM) 17.74.353, 355, 356. Final clearance air sampling and project close-out will be completed in accordance with ARM 17.74.357 (Standards and Methods for Clearing Asbestos Projects and Requirements for Persons Clearing Asbestos Projects). The work areas will be deemed clean and ready for re-occupancy when the air quality meets the EPA and Montana clearance criteria of less than or equal to 0.01 fibers per cubic centimeter of air ($\leq$.01 f/cc).

Libby Public Schools would seek cost estimates from asbestos abatement contractors capable of completing the work in accordance with regulations described above. A copy of the final clearance air sampling report describing all services completed throughout the project would be transmitted to Libby Public Schools and U.S. EPA.

8.0 REFERENCES

EPA, 2011. Before You Tear It Down, Get the Mercury Out. May 2011. Accessed October 2020. https://deq.mt.gov/Portals/112/Land/Recycle/Documents/pdf/Fact_Sheet_Mercury11.pdf

USDA Forest Service, 2018. Are Thermostats Dangerous? Modified May 2018. Accessed October 2020. https://www.fs.fed.us/eng/toolbox/haz/haz18.htm#:~:text=Many%20thermostats%20use%20mercury%20switches,are%20inside%2C%20they%20contain%20mercury.

Weston Solutions, Inc., 2020a. Phase II Environmental Site Assessment for Asa Wood Elementary School, 700 Idaho Ave, Libby, Lincoln County, Montana. September.

Weston Solutions, Inc., 2020b. Phase I Environmental Site Assessment for Asa Wood Elementary School, 700 Idaho Ave, Libby, Lincoln County, Montana. September.

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