



Technical Memorandum

To: Kara Master, DEQ

Date: December 6, 2024

From: Justin Hansen and Josh Elliott, PE, MFA

Project No.: M0785.28.001

Re: Supplemental Memorandum
Analysis of Brownfield Cleanup Alternatives
Lincoln School, 550 North Court Avenue, Burns, Oregon
ECSI #6562
EPA Cooperative Agreement # 4B-02J52001

Introduction and Purpose

Maul Foster & Alongi, Inc. (MFA) has prepared this Analysis of Brownfield Cleanup Alternatives (ABCA) supplemental memorandum (memo) for the Lincoln School located at 550 North Court Avenue in Burns, Harney County, Oregon (the Site) (see Figure 1). In November 2023, Harney County (the County) was awarded a United States Environmental Protection Agency (EPA) Brownfields Cleanup Grant CA# 4B-02J52001 that will be used to properly and safely remove hazardous building materials and a 10,000-gallon aboveground heating oil tank (HOT) at the Lincoln School prior to redevelopment of the Site as a justice center. In December 2023, the County and the Oregon Department of Environmental Quality (DEQ) executed an intergovernmental agreement for DEQ to act as the County's qualified environmental professional.

On May 21, 2024, MFA updated and finalized an ABCA to identify and recommend a cleanup alternative to address contamination to levels protective of human health and the environment while preparing the Site for future redevelopment (MFA 2024a).

The ABCA provided:

- Site information, identification, and delineation of hazardous and/or regulated materials, an exposure analysis describing contaminant sources and exposure pathways, cleanup objectives, applicable cleanup standards and regulations, and the proposed cleanup alternative.
- An analysis of each alternative (including no action) with a description of the technology, feasibility, effectiveness, and cost.
- The recommended cleanup alternative based on an evaluation of each alternative.

Cleanup alternatives were provided for the following environmental impacts:

- An aboveground HOT in the Boiler Room at the Site. The language in the *Cleanup Work Plan* (MFA 2024b) was modified to refer to the aboveground HOT as a heating oil aboveground storage tank (AST). This term is subsequently used in this memo.
- Asbestos-containing materials in buildings at the Site.
- Lead-based paint (LBP) in buildings at the Site.

The locations of these environmental impacts are shown in Figure 2.

The purpose of this memo is to document the updated project scope and implementation strategy, which were adjusted based on field findings, input from the County, and communications between the EPA Project Officer and DEQ. During a pre-bid site walk, an AST service provider informed MFA that the tank thought to be the heating oil AST was a steam boiler. The AST is contained in a masonry brick and concrete masonry unit block enclosure attached to the Boiler Room and only accessible via a roof hatch. To avoid demolition of the Boiler Room walls or roofing, DEQ and the county decided to decommission the AST in-place and proceed with removal of the steam boiler to facilitate cleaning and patching of the Boiler Room floor.

This memo was prepared by qualified environmental professionals and reviewed by a professional engineer licensed in the State of Oregon. Activities described in the ABCA, which are supplemented by this memo, were prepared consistent with the *Cleanup Work Plan* (MFA 2024b) prepared for the Site.

Scope and Implementation Updates

Heating Oil AST

The ABCA-recommended alternative for the heating oil AST included removal and full cleanup. Specific activities included closure and draining the heating oil AST of its residual contents; cleaning, removal (via cutting to avoid demolishing walls or the roof of the Boiler Room); cleaning residual impacts; and confirmation sampling post-remedy implementation (MFA 2024a).

The *Cleanup Work Plan* identified decommissioning in-place as the cleanup approach for the heating oil AST, which will require a permit for confined space work (MFA 2024b). The evaluation of cleanup alternatives and recommended alternative for the heating oil AST are amended as follows:

Alternative 4—Decommissioning In-Place

Alternative 4 includes decommissioning in-place and remediation of impacted areas by the selected subcontractor. In this alternative, the heating oil AST will be decommissioned in-place, residual tank contents removed, the tank rinsed, all residual contents and wash water transported for offsite recycling or disposal, and residual impacts to environmental media investigated. If analytical data indicates remediation is necessary, impacted media will be remediated to acceptable risk levels and confirmed through confirmation sampling.

The selected subcontractor will also remove the steam boiler and associated equipment and components for off-site recycling or disposal, scope the sewer sump associated with the boiler system up to 100 feet to determine its discharge location, grout the sump and patch an area of missing Boiler Room floor, and clean and pressure wash surface staining within the Boiler Room with collection of wash water for off-site recycling or proper disposal.

- Feasibility: Alternative 4 is technically feasible.

- **Effectiveness:** Alternative 4 is effective because heating oil AST decommissioning in-place removes residual tank contents and addresses potentially impacted environmental media, mitigating future impacts to human health or the environment.
- **Cost:** The estimated cost to complete Alternative 4 is between \$95,000 and \$120,000. Actual costs will be based on the extent of cleanup and removal of impacted media and final contractor bids.

Lead-Based Paint

The ABCA (see Section 6.1.3) describes LBP cleanup standards, including the Code of Federal Regulations (CFR) and Toxic Substances Control Act (TSCA). Specifically, 24 CFR 35.1340 is visual confirmation of removal or encapsulation of all painted materials, all pre-existing dust, and all dust generated during LBP removal. Generally, LBP removal in residential or child-occupied facilities require additional regulations to confirm removal and receive clearance of the abated area.

TSCA regulations and environmental product declaration rules establish clearance procedures for all lead abatement projects within residential or child-occupied buildings by a certified inspector or lead risk assessor. The ABCA stated that wipe samples are to be collected with results compared against the following 2021 finalized clearance standards:

- 40 micrograms of lead in dust per square foot of flooring.
- 250 micrograms of lead in dust per square foot of interior windowsills.
- 400 micrograms of lead in dust per square foot of window troughs.
- 800 micrograms of lead in dust per square foot on exterior concrete.

In October 2024, EPA finalized updated clearance standards to the following values:

- 5 micrograms of lead in dust per square foot of flooring.
- 40 micrograms of lead in dust per square foot of interior windowsills.
- 100 micrograms of lead in dust per square foot of window troughs.

The October 2024 clearance standards supersede the 2021 clearance standards.

Remedial Cost Analysis

The table below presents a summary of estimated costs for the recommended alternative.¹

Table: Summary of Recommended Alternative Costs

Task	Estimated Quantity	Range of Cost	Maximum Cost Estimate
Heating Oil AST Decommissioning In-Place, Content Removal, Steam Boiler Removal, Sewer Sump Scope, and Surface Cleaning	3,000 gallons + additional rinse water	\$95,000 to \$120,000	\$120,000
Full Asbestos-Containing Material Abatement	23,950 square feet 1,900 linear feet	\$200,000 to \$260,000	\$260,000
Mixed LBP Removal and Encapsulation	2,200 square feet	\$15,000 to \$20,000	\$20,000
Engineering Design, Project Monitoring, Programmatic Management, Completion Reports	75 business days	\$115,000 to \$130,000	\$130,000
		Total:	\$530,000

Notes

AST = aboveground storage tank.
LBP = lead-based paint.

Attachments

References

Limitations

Figures

¹ The updated Table reflects contractor bids received after the ABCA was finalized.

References

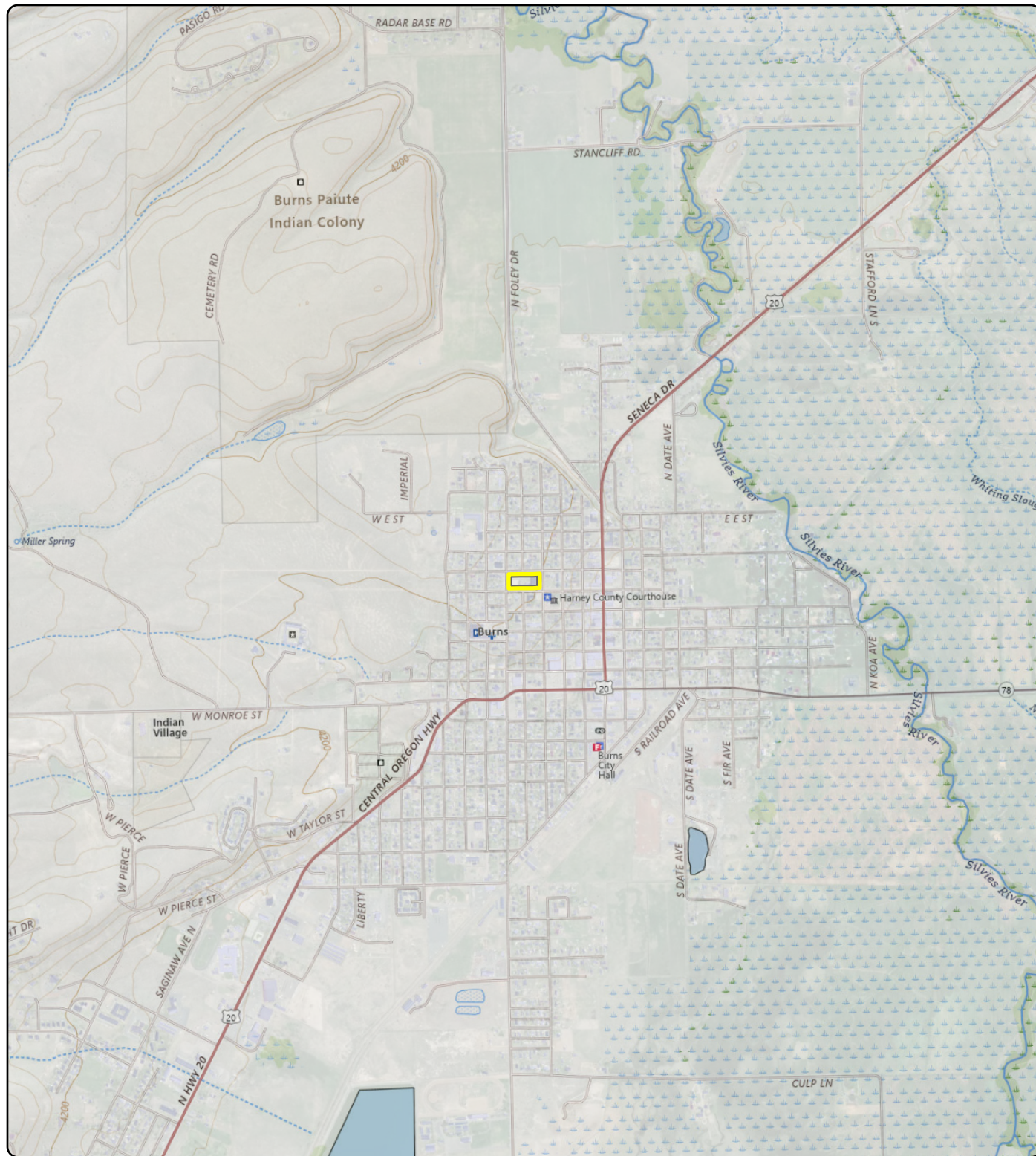
- MFA. 2024a. Analysis of Brownfield Cleanup Alternatives, Lincoln School, 550 North Court Avenue, Burns, Oregon, ECSI 6562, EPA Cooperative Agreement # 4B-02J52001. Prepared for the Oregon Department of Environmental Quality. Maul Foster & Alongi, Inc.: Portland, Oregon. May 21.
- MFA. 2024b. *Cleanup Work Plan, Lincoln School Cleanup Project, ECSI #6562, EPA Cooperative Agreement # 4B-02J52001*. Prepared for the Oregon Department of Environmental Quality. Maul Foster & Alongi, Inc.: Portland, Oregon. October 23.

Limitations

The services undertaken in completing this technical memorandum were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This technical memorandum is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this technical memorandum apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this technical memorandum.

Figures



Notes
U.S. Geological Survey 7.5-minute topographic quadrangle (2020): Burns.
Township 23 south, range 31 east, section 7.
ABCA = Analysis of Brownfield Cleanup Alternatives.

Data Source
Site boundary obtained from Harney County.

Legend

 Site Boundary

Figure 1 Site Location

Supplemental ABCA Memorandum
Lincoln School
550 North Court Avenue
Burns, Oregon

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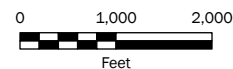




Figure 2 Site Overview and Features

Supplemental ABCA Memorandum
Lincoln School
550 North Court Avenue
Burns, Oregon

Legend

- HOT
- ACM and LBP Abatement Areas
- Site Boundary
- Tax Parcels

Note
ABCA = Analysis of Brownfield Cleanup Alternatives.
ACM = asbestos-containing materials.
HOT = aboveground heating oil tank.
LBP = lead-based paint.

0 50
Feet



Data Sources
Aerial photograph obtained from Bing; tax lot data obtained from Harney County.

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