

Analysis of Brownfield Cleanup Alternatives

Former Grant County Detention Center
Brownfield Cleanup Project
Silver City, Grant County, New Mexico

Prepared for

New Mexico Environment Department
Ground Water Quality Bureau
Brownfields Program
Santa Fe, New Mexico

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1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this Analysis of Brownfields Cleanup Alternatives (ABCA) for the Former Grant County Detention Center located at the intersection of West Yankie Street and North Lyon Street in Silver City, New Mexico (the site) (Figure 1). A brownfield is a property that may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The former Grant County Detention Center contains asbestos and mold. The purpose of an ABCA is to provide information about contamination issues at the property and evaluate the effectiveness, implementability, and cost of different cleanup options. Grant County (the County) plans to demolish the building and redevelop the property.

This cleanup project is being undertaken by the New Mexico Environment Department (NMED) and Grant County. NMED and the U.S. Environmental Protection Agency (EPA) are the key regulatory agencies overseeing the project. NMED and EPA are responsible for overseeing the review and approval of all project documents prepared by DBS&A and environmental cleanup work to ensure compliance with all applicable regulations. NMED is funding the preparation of the Phase III Cleanup Planning documents and the proposed cleanup work at the site. The ABCA outlines site cleanup alternatives evaluated by EPA, NMED, and the County during the cleanup planning process for the project. This ABCA will be available to the public for a period of 30 days, during which comments will be solicited.

1.1 Site History

The site was constructed in 1972, with a remodel and addition completed in 2005. The site was used as the County Detention Center until approximately 2013, and has remained vacant since that time. The site consists of a two-story vacant building of approximately 15,800 square feet.

A Phase I environmental site assessment (ESA) was conducted by ALL Consulting, LLC in January 2019. The potential presence of mine waste from an abandoned mine on an adjacent property was identified as a recognized environmental condition (REC). Four business environmental risks were identified, including the presence of suspected lead-based paint (LBP), suspected asbestos-containing materials (ACM), suspected polychlorinated biphenyl (PCB) containing materials, and naturally occurring radiological material (NORM). The ESA also identified possible mold growth due to water leaks, domestic refuse, and an emergency generator as other environmental findings (ALL, 2019).

AECOM conducted a regulated building materials (RBM) assessment and limited subsurface soils assessment at the site in January 2021. Approximately 6,400 square feet of asbestos-containing floor tile and mastic and approximately 20 square feet of asbestos-containing silver-surfaced off-white sealant on patches to the roof were identified in the building. No LBP, PCBs, or NORM were detected in samples collected from the site. No remediation standards have been set for mold, but two types of mold spores were identified growing in the site building: *Stachybotrys* and *Acremonium*-like spore types. No Resource Conservation and Recovery Act (RCRA) metals were identified at concentrations above the NMED residential soil screening levels, indicating that the site has not been impacted by mine waste (AECOM, 2021).

The site is located in mixed use residential and commercial area in Silver City, New Mexico. As such, the surrounding property owners and homeowners will need to be made aware of the proposed remedial actions at the site.

1.2 Summary

The major environmental concern identified at the site is ACM present in the building on the site. Three potential cleanup alternatives were examined by Grant County for the site.

- No action
- Implementation of an ACM operation and maintenance (O&M) program
- ACM abatement

Of the three alternatives, the option selected as the most feasible is abatement.

1.3 Previous Environmental Investigations and Available Information

Reports, data, and information from previous environmental investigation activities implemented and completed to date at the site include the following:

- *Targeted Brownfields Assessment Phase I Environmental Site Assessment, Old Grant County Jail TBA* (All Consulting, 2019): Abandoned mine lands was identified as an REC due to possible mine waste eroding from an adjacent property onto the site. Four business RECs were identified at the site, including suspected ACM, suspected LBP, suspected PCBs, and NORM. The report identified apparent mold growth, domestic refuse, and an emergency generator as additional environmental findings.

- *Regulated Building Materials and Limited Subsurface Soils Assessment Report, Grant County Detention Center* (AECOM, 2021): Approximately 6,400 square feet of floor tile and mastic and approximately 20 square feet of silver-surfaced off-white sealant on roof patches and penetrations were identified as ACM. No LBP was determined to be present in samples collected at the site. PCBs were not detected in samples collected at the site at concentrations above the applicable NMED standards. Radon was not detected in samples collected at the site at levels above the EPA action level. Mold was sampled and determined to be *Stachybotrys* spores with sample results ranging from 200 to 450,000 spores per unit and *Acremonium*-like spores identified in one sample with 220,000 spores per unit. No Resource Recovery and Conservation Act (RCRA) metals were detected at concentrations above the applicable NMED standards, and it was determined that the site has not been impacted by abandoned mine waste.

2. Applicable Regulations

Occupational Safety and Health Administration (OSHA) has defined asbestos as naturally occurring minerals that include chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite, and any of those minerals that have been chemically treated and/or altered. These fibrous silicate minerals were added to building materials for their thermal insulation, chemical stability, and high tensile strength properties. Asbestos minerals were added to cement pipes, brake shoes, duct insulation, flooring, mastic, gaskets, spray-applied textures, blown-in insulation, wiring insulation, taping compounds, packing materials, roofing shingles, roofing felt, ceiling panels and other building products (OSHA, 2022).

The disturbance or dislocation of ACM may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workers and building occupants. Exposure to airborne asbestos fibers appears to be associated with asbestosis, lung cancer, and mesothelioma (U.S. EPA, 2022a and 2022b).

EPA National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos Hazard Emergency Response Act (AHERA), NMED, and OSHA regulations require inspection of commercial properties before any renovation or demolition to determine the presence of ACM, including friable ACM and Category I and II non-friable ACM as defined in 40 CFR, Part 61, Subpart M, Section 61.145.

Friable ACM, Category I and II ACM in poor condition, or Category I and II ACM that becomes friable during renovation or demolition and is present in quantities greater than 160 square feet, 260 linear feet, or 35 cubic feet are subject to the regulations pertaining to removal and disposal.

NMED requires that asbestos removal contractors comply with the remediation and 40-hour contractor supervisor training requirements of the NESHAP, 40 CFR 61 Subpart M, and have a GB-98 general contractor's license and a GS-29 special contractor's license from the New Mexico Regulation & Licensing Department (NMRLD) Construction Industries Division.

3. Cleanup Alternatives Analysis

Based on the RBM assessment completed by AECOM in September 2020, it is currently estimated that ACM is present at the site in the following approximate quantities and condition:

- 6,400 square feet of tan floor tile and black mastic in fair to good condition
- 20 square feet of silver-surfaced off-white sealant on roof patches and penetrations in poor condition

The following alternatives were considered:

- No action
- Implementation of an O&M program
- Abatement

For each of these alternatives, the evaluation criteria were modified from the nine criteria required by 40 CFR 300.430(e) of the National Contingency Plan (NCP) and Remedial Investigation/Feasibility Study (RI/FS) Guidance (U.S. EPA, 1988). The following criteria were considered:

- *Short-term effectiveness:* Addresses the effects of the alternative during the construction and implementation phase until the remedial action objectives (RAO) are met. Under this criterion, alternatives are evaluated for their effects on human health and the environment during implementation of the remedial action.

- *Long-term effectiveness and permanence:* Addresses the risk that remains at the site after the RAO have been met. The primary focus of this evaluation is the extent and effectiveness of controls used to manage the risk posed by treatment residuals or untreated wastes.
- *Implementability:* Addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials that may be required during its implementation. The following factors were considered:
 - ◇ Ability to construct the technology
 - ◇ Monitoring requirements
 - ◇ Availability of equipment and specialists
 - ◇ Ability to obtain approvals from regulatory agencies.
- *Costs:* Preliminary cost estimates are intended solely for planning purposes and should be considered for relative comparisons only.

3.1 No Action

Under this alternative, no action would be undertaken to reduce exposure to ACM. The building on the site would remain in the current state of disrepair.

3.1.1 Short-Term Effectiveness

There is no short-term effectiveness associated with this alternative. Future workers for all construction tasks would be exposed to unacceptable risks.

3.1.2 Long-Term Effectiveness

There is no long-term effectiveness associated with this alternative. Potential exposure risks would not be mitigated.

3.1.3 Implementability

There would be no required actions or technology necessary to implement this option. This alternative would result in no administrative burden. No permits or approvals would be required. Because site risks are not mitigated under the no action alternative, regulatory buy-in would not be achieved, and an occupancy permit approval would not be received.

3.1.4 Cost

There are no costs associated with this alternative.

3.2 Implementation of an ACM O&M Program

Under this alternative, all ACM would be left in place, and the site would be monitored to ensure that additional degradation of the ACM was not occurring.

3.2.1 Short-Term Effectiveness

An O&M program is a formulated plan of training, cleaning, work practices, and surveillance to maintain ACM within the building in good condition. The goal is to minimize exposure of all building occupants to related hazards.

To accomplish this objective, EPA (<https://www.epa.gov/asbestos/what-operations-and-maintenance-om-program>) recommends that an O&M program include work practices to:

- Maintain ACM in good condition
- Ensure proper cleanup of asbestos fibers previously released
- Prevent further releases of asbestos fibers
- Monitor the condition of ACM

Impacts during implementation of an O&M program would include possible ACM exposure to workers within the building.

3.2.2 Long-Term Effectiveness and Permanence

An ACM O&M program would not be an effective treatment for the site because the building is in poor condition. This alternative assumes that only minimal inspection and maintenance is required (i.e., painting, sealing, or caulking). However, given the condition of the asbestos, significant initial costs are anticipated.

3.2.3 Implementability

The administrative burden for implementing this alternative would be high. This alternative would require significant amounts of staff time to oversee on-going O&M activities at the site. Although an O&M program could be implemented, Grant County is interested in demolition of the existing building and redeveloping the site into a new judicial complex free of ACM hazards.

3.2.4 Costs

The cost of implementing an O&M Program has not been detailed. Assuming that O&M activities could be performed by trained staff at the facility and that material costs to maintain the integrity of the asbestos (tile, mastic, etc.) are low, annual O&M costs are likely to be less than \$2,000 dollars per year when considering both materials and labor. Costs the first year would be substantially higher, while trending downward for several years after the initial assessment.

3.3 ACM Abatement

Comprehensive asbestos abatement efforts should be performed prior to any renovation or demolition activities under the direct oversight of a third party independent asbestos consultant.

EPA requires that identified ACM that are friable, or may become friable, during the course of renovation or demolition, be removed from the buildings prior to renovation or demolition activities begin. Steps should be taken to follow the guidelines set forth in OSHA 29 CFR 1926.1101 for removal of regulated asbestos containing materials (RACM) and worker protection. Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763 Section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Non-friable ACM that will be disturbed during demolition may be removed by a general contractor, but all NESHAP and state regulations must be followed. Friable ACM that will be disturbed during demolition must be removed by a licensed abatement contractor. ACM (friable and non-friable) that are removed must be disposed at a special wastes landfill.

3.3.1 Short-Term Effectiveness

Adverse impact to human health and the environment during implementation should be negligible, provided the ACM abatement contractor complies with all health and safety requirements for asbestos demolition/renovation projects, which are governed by NESHAP, OSHA, and the State of New Mexico. These include, but are not limited to air monitoring, temporary pressure differential and air circulation system implementation, installation of

temporary enclosures, use of respiratory protection, use of decontamination units, and site cleaning and decontamination.

All ACM materials will be transported to and disposed of at a licensed ACM disposal facility.

3.3.2 Long-Term Effectiveness and Permanence

Abatement of ACM will provide long-term effectiveness and permanence. All of the identified ACM will be removed from the site, eliminating the potential health hazard to building occupants, visitors, and demolition workers.

3.3.3 Implementability

The ACM abatement is easily implemented using currently available construction technology and equipment. A qualified ACM Contractor will be hired to perform the ACM removal and disposal.

The NMED Solid Waste Bureau regulations require that all waste ACM (more than 1 percent asbestos) should be disposed at a special wastes landfill, which requires removal of ACM and separation from non-asbestos materials. Removal must be performed prior to the demolition of the building. NESHAP guidelines must be followed. When ACM are to be removed, Grant County or its representatives should do the following:

- Comply with requirements for asbestos demolition/renovation projects, which are governed by NESHAP, OSHA, and the State of New Mexico.
- Retain the services of an independent analytical testing laboratory or consulting firm to monitor the performance of the abatement contractor, the completeness of the removal work, and the quality of the air before, during, and after the removal work to ensure that the contractor meets project specifications; also, to document if the work was performed in compliance with the respective EPA and OSHA standards.
- Perform a final visual inspection and air clearance sampling prior to reoccupying the asbestos removal work area.
- Document all correspondence from the abatement contractor and the testing laboratory and retain this information in a permanent record.
- Notify local, state, and federal air pollution officials by letter prior to ACM removal, as required by the NESHAP regulations.

The administrative burden for implementing this alternative is moderate to high. A moderate amount of NMED and County staff time is required for project oversight and documentation associated with the cleanup process. Staff will be involved in managing the project, including document review and working with the selected abatement contractor to ensure that the work is being performed in accordance with EPA requirements.

3.3.4 Costs

The cost of the ACM abatement is estimated at \$60,752.14. This cost includes construction costs implemented by the ACM abatement contractor, third-party oversight/construction management, and reporting.

4. Recommended Alternative

The alternatives are summarized in Table 1. The recommended alternative is Alternative 3, ACM abatement. The no action alternative is not an option because ACM has been identified in the site building. The administrative burden for implementing Alternative 2 would be high. This alternative would require significant amounts of staff time to oversee ongoing O&M activities at the site, and Grant County is interested in demolition of the building and redeveloping the site into a new judicial complex that is free of ACM hazards.

Alternative 3 is feasible, has a manageable administrative burden and will result in significant environmental benefit through elimination of ACM from the site prior to demolition.

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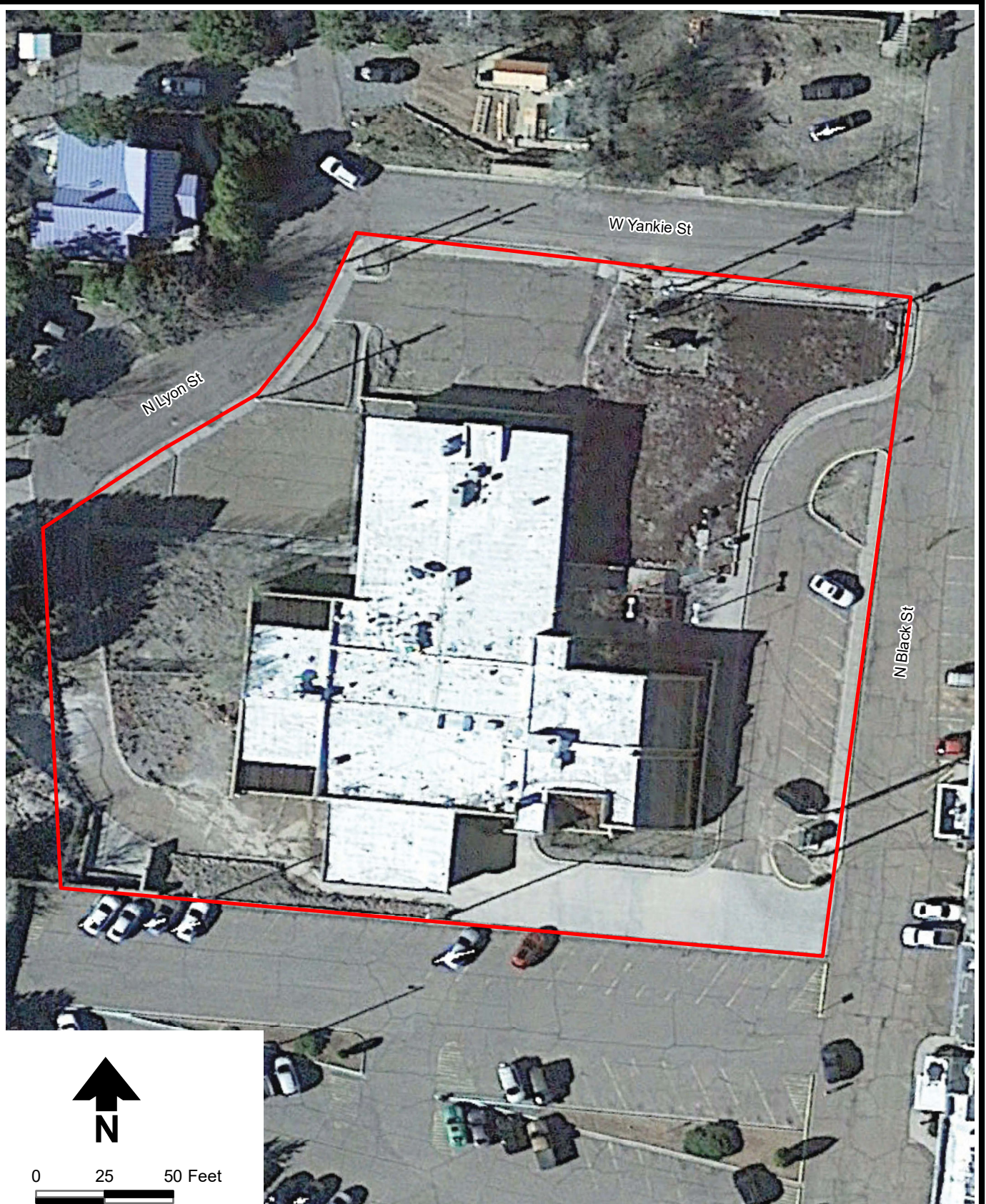
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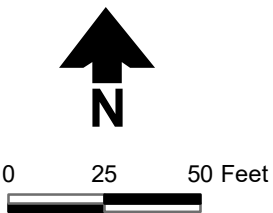
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Figure



Source: Google Earth Pro, March 21, 2019



Explanation

 Approximate site boundary

FORMER GRANT COUNTY
DETENTION CENR
SILVER CITY, NEW MEXICO

Site Map



DBS & A
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Figure 1

Table

Table 1. Evaluation Criteria for Considered Alternatives

Alternative	Short-Term Effectiveness	Long-Term Effectiveness and Permanence	Implementability	Costs
No Action	None: future site workers exposed to unacceptable risks.	None: future residents and visitors would be exposed to unacceptable risks associated with ACM.	Easily implemented, as no action is taken. Because site risks are not mitigated under the No Action alternative, regulatory buy-in would not be achieved, and an occupancy permit approval would not be received.	None
Long-Term O&M	Ongoing impacts during implementation of an O&M program would include possible ACM exposure to workers within the building.	Moderate: Long term effectiveness would only be attained if very active monitoring was performed and localized mitigation (sealing, etc.) was performed by highly trained personnel.	The administrative burden for implementing this alternative would be high. This alternative would require significant amounts of staff time to oversee ongoing O&M activities at the site.	\$60,000 ^a
Abatement	Alternative poses the greatest short-term risks unless all work is performed by a certified contractor implementing all appropriate requirements.	This alternative would provide the greatest long-term effectiveness and permanence, as all ACM would be removed.	Routinely implemented at sites throughout the U.S. by certified asbestos contractors.	\$60,752.14 ^b

^a Assumes annual costs of \$2,000 per year for 30 years

^b Based on previous bid for asbestos removal

ACM = Asbestos-containing building material

O&M = Operation and maintenance