# Analysis of Brownfields Cumulative Alternatives (ABCAs)
## Analysis of Brownfields Cleanup Alternatives

**Analysis of Brownfields Cleanup Alternatives**
**For**
**Bay Mills Silver Dome/Old BMIC Public Works Site- Bay Mills Indian Community, MI**

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## I. Introduction & Background

### a. Site Locations

The Silver Dome/Old BMIC Public Works site is located at 12069 Lakeshore Drive Brimley, MI 49715, coordinates: 46 26 56.23N, 84 36 00.12W. This site is on Tribal reservation lands.

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

The site was occupied by the BMIC Public Works Department from approximately 1998 to 2019. BMIC Maintenance utilized a portion of the site during this time frame as well. The site is not secured and allows for unimpeded access by the general public. The site is currently used by Public Works and Maintenance departments for equipment and construction materials storage purposes only.

In July 2019 a spill was discovered and reported at the Silver Dome after recent rains caused oil and other materials to overflow a containment pad and leak onto the soil—visibly impacting approximately 400sqft. Cleanup/remediation steps were taken based on recommendations from the EPA and Mackinac Environmental Technology. Site assessment findings included:

- Recovered Containment Liquids: homogenized liquids contained elevated levels of tetrachloroethylene. Proper disposal as a hazardous waste occurred.
- Secondary Containment Tanks: uncoated concrete tanks were in prolonged contact with petroleum products. It was assumed the concrete tanks were contaminated and were removed and properly disposed at a qualified landfill.
- Soils: visible staining existed in the areas immediately surrounding the concrete containment structures. Soil sampling did not encounter contamination above Part 201 GRCC criteria. Removal of the impacted soil removed the possibility of any future leaching of potential contaminants.
- Groundwater: one monitor well (of 5 installed wells) had sample results with one compound slightly above Part 201 GSI criteria.
- Groundwater sampling continued through the summer of 2022 showing contaminant levels were attenuating.

### c. Site Assessment Findings

- During the winter of 2023, per MI EGLE recommendation, soil vapor sampling was conducted at the site. This resulted in samples showing results which exceeded indoor air criteria for chlorinated solvents including Tetrachloroethylene (PCE) This source is not assumed to be connected to the prior spill in 2019. It is located under the slab of the structure floor.

- A pre-demolition survey occurred in the fall of 2024 for asbestos containing materials and lead based paint. Small quantities of both materials were found in the Silver Dome structure.

### d. Project Goal

The overall purpose of a cleanup at this site is to allow the property to be redeveloped while mitigating risks posed to human health and the environment. The cleanup goals for this site are listed below.

- Properly abate asbestos and lead paint containing materials.
- Demolish the log office building and deconstruct the Quonset hut structure. Metal from the Quonset hut will be salvaged for reuse. Removing the structures in the area of contamination will allow access to the impacted soil for removal, remediation and sampling activities. This will also eliminate the health concern posed by the public and staff who may enter the building.
- Excavate and properly dispose of the impacted soil and concrete in a qualified landfill.
- Remove, treat and dispose of homogenized liquids deemed "hazardous."
- Backfill the site with clean fill.
- Conduct cleanup operations that are compliant with applicable tribal and federal standards which will protect human health and the environment
    - Resample soil and groundwater in impacted area to confirm standards are met

## II. Applicable Regulations and Cleanup Standards

### a. Cleanup Oversight Responsibility

The cleanups will be overseen by the BMIC's Tribal Brownfields Program, Biological Services Department and Planning Department, in coordination with U.S. EPA Region 5. Certified contractors will be hired to conduct the cleanup.

### b. Cleanup Standards for major contaminants

These standards will follow rules and regulations during the cleanup tasks and activities which BMIC has adopted for clean ups:

§ Michigan EGLE Cleanup Criteria Requirements for Response Activity (formerly the Part 201 Generic Cleanup Criteria.)

### c. Laws & Regulations Applicable to the Cleanup (briefly summarize any federal, tribal, state, and local laws and regulations that apply to the cleanup)

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act; Tribal laws. The cleanup contractor will be required to follow OSHA and EPA regulations and notifications. Federal and Tribal laws regarding procurement of contractors to conduct the cleanup will be followed. In addition, all appropriate permits will be obtained prior to the work commencing.

## III. Evaluation of Cleanup Alternatives

Each of the potential cleanup alternatives is evaluated against the following set of four criteria:

**1) Compliance**

§ Compliance with applicable tribal and federal regulations.

**2) Effectiveness**

§ Protectiveness of human health and the environment, including workers during implementation;

§ Reliability for mitigation of risk in the short-term and long-term effectiveness;

§ Reduction of toxicity, mobility, and/or volume of contaminants;

§ Ability to achieve the cleanup goals; and

§ Resiliency to climate change conditions (including extreme weather conditions such as

flooding).

**3) Implementability**

§ Technical feasibility;
§ Availability of required services, materials, and equipment;
§ Administrative feasibility;
§ Construction feasibility; and
§ Maintenance and monitoring requirements.

**4) Cost (Conceptual costs for comparative analysis only)**

§ Amount time, effort, materials, and labor necessary.

The selection of "effectiveness," "implementability," and "cost" as evaluation criteria is based upon the EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA, 1988). In addition, the selection of "compliance" as an evaluation criterion is used to take into account variations between federal, state, and/or local regulations, if applicable, on a site-by-site basis.

## IV. Cleanup Alternatives

### a. Cleanup Alternatives Considered (minimum two different alternatives plus No Action)

To address contamination, three different alternatives were considered, including:

- Alternative #1: No action
- Alternative #2: Abatement of asbestos and lead paint materials;
- building demolition/deconstruction; excavation, removal, and disposal of impacted soil and concrete; removal treatment and disposal of homogenized liquids, monitoring
- Alternative #3: Continue to monitor site with possible future action or no action

<u>Alternative #1: No Action</u>

Advantages

- No Cost

Disadvantages

- All contamination will still exist.
- Health, environmental, and safety hazards remain
- An eyesore will remain.
- The needs of the community will not be met since the sites cannot be reused with the status quo situation.
- Not compliant with Federal and Tribal regulations
- No immediate costs, but potential high costs in future due to unlimited liability and deteriorating conditions.
- The "No Action" alternative is technically ineffective

<u>Alternative #2: Excavation, removal, and disposal of impacted soil, concrete, and homogenized liquids</u>

Advantages

- Safely abate asbestos and lead paint containing materials
- Demolish/deconstruct and remove buildings in affected area
- Excavate and properly dispose of the impacted soil and concrete
- Remove, treat and dispose of homogenized liquids deemed "hazardous"

- Backfill site with clean fill
- Conduct cleanup operations that are compliant with applicable tribal, state, and federal standards
- Removal of contamination will reduce safety, health and environmental risks.
- This will allow for reuse/redevelopment of these sites.

Disadvantages

- Alternative would incur a moderate amount of time, effort, labor, and material costs to complete the excavation, removal, and disposal of the impacted soil, concrete, and homogenized liquids.
- Estimated total cost is $280,000

Alternative #3: Continue to monitor site with possible future action or no action
Advantages

- Continue to conduct liquid and soil characterization samples to monitor contamination

Disadvantages

- All contamination will still exist.
- Health, environmental, and safety hazards remain
- An eyesore will remain.
- The needs of the community will not be met since the site cannot be reused with the status quo situation.
- Not compliant with Federal and Tribal regulations
- Costs associated with continued monitoring and sampling

**b. Cost Estimate of Cleanup Alternatives (summary of the compliance, effectiveness, implementability and a preliminary cost estimate for each alternative)**
To satisfy EPA compliance, requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

Summary Comparison of Potential Alternatives

| Cleanup Alternative | Compliance | Effectiveness | Implementability | Cost | Comment |
|---|---|---|---|---|---|
| **Alternative #1: No Action** | Compliant | Not effective | Implementable | Low (3rd) | **This alternative does not satisfy the cleanup goals or allow for redevelopment of the site** |

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|---|---|---|---|---|---|
| **Alternative #2: Excavation, removal, and disposal of impacted soil, concrete, and homogenized liquids** | Compliant | Effective | Implementable | High (1st) | **This alternative satisfies the cleanup goals and allows for redevelopment of the sites.** |
| **Alternative #3: Continue to monitor site with possible future action or no action** | Compliant | Not effective | Implementable | Moderate (2nd) | **This alternative does not satisfy the cleanup goals or allow for redevelopment of the site in a timely manner.** |

### c. Recommended Cleanup Alternative

Of the three cleanup alternatives evaluated for selection at the Silver Dome/Old BMIC Public Works site, located at12069 Lakeshore Drive Brimley, MI 49715, coordinates: 46 26 56.23N, 84 36 00.12W, the preferred alternative recommended is: Alternative #2: Abatement of asbestos and lead paint materials; building demolition/deconstruction; excavation, removal, and disposal of impacted soil and concrete; removal treatment and disposal of homogenized liquids and monitoring. This alternative was selected based upon overall compliance with Tribal and federal regulations, effectiveness in protecting human health and the environment in both the short-term and long-term, feasibility of implementation, and cost effectiveness.