Brownfields Cleanup and Redevelopment

Community Relations Plan

for Soil Reclamation of the Milwaukee Railroad Roundhouse

Deer Lodge, Montana

Prepared by:

Headwaters
RESOURCE CONSERVATION DEVELOPMENT

Headwaters RC&D

65 E Broadway St., 5th Floor, Butte MT 59701

Community Relations Plan

Milwaukee Roundhouse Soil Remediation

Deer Lodge, MT

Prepared by _____ _____

Kelly Sullivan — Date
Headwaters RC&D

Approved by _____ _____

Greg Davis, Brownfields Project Manager — Date
U.S. Environmental Protection Agency, Region 8

TABLE OF CONTENTS

Overview:

The purpose of this Community Relations Plan (CRP) is to describe Headwaters RC&D's strategy to proactively inform and involve residents and visitors who are interested in the proposed environmental remediation and redevelopment activities conducted where the Milwaukee Roundhouse railroad maintenance facility was located, in Deer Lodge, Montana.

The CRP outlines how Headwaters RC&D has involved, and will continue to involve, its residents and visitors, the Montana Department of Environmental Quality (DEQ), the United States Environmental Protection Agency (EPA), and the local governments of Powell County and the City of Deer Lodge.

Project contacts:

Kelly Sullivan
Executive Director
Headwaters RC&D
406-490-8439
ksullivan@headwatersrcd.org

Mark Brooke
Senior Engineer
Hydrometrics
406-431-7694
mbrooke@hydrometrics.com

Amanda Cooley
Planning Director
Powell County
406-846-972
acooley@powellcountymt.gov

Administrative files and records are located at the Powell County Courthouse: 409 Missouri Ave. Ste 114 in Deer Lodge, Montana.

SITE DESCRIPTION AND HISTORY

LOCATION

The site consists of one property locally known as the Milwaukee Roundhouse site (MRA). The property is located to the north of Sun Mountain Lumber. It lies within the NW1/4 of Section 4, Township 7 North, Range 9 West in the City of Deer Lodge. The property is within City limits, and is owned by Powell County.

SITE HISTORY

The Milwaukee Roundhouse Property has a rich history. Between 1907 and the early 1980s, this parcel was the site of a railroad roundhouse used to perform routine maintenance on locomotive engines. It was one of the largest and earliest electrification projects in the United States. The structure has been demolished and the site is contaminated with heavy metals and hydrocarbons relative to the use of the facility for railroad maintenance activities.

Powell County acquired the property in November 2005. The property has undergone a series of testing and reclamation actions to address contamination issues, following acquisition by the County. The remediation of known contaminants has taken decades due the involvement of various stakeholders and changing regulations.

The most recent action was the approval of a Remediation Proposal (RP) by the Montana DEQ to perform a complete soil reclamation for the site in March 2023. This document provides a pathway for soil reclamation by outlining actions to date, an analysis of cleanup alternatives, and methods for removal and monitoring. A copy of this plan is on file with the administrative files in the County Courthouse.

Following the approval of the RP by DEQ, Powell County contacted Headwaters RD&C to assist in the removal and redevelopment activities for the property. Headwaters RD&C locally administers the DEQ Brownfields program and funding, and will be supporting Powell County as they work to complete soil remediation, which is anticipated to occur in 2024.

BENEFIT TO THE COMMUNITY

The intention of this soil reclamation effort is to provide a complete and thorough excavation of contaminated soils with replacement by clean fill so that the property can be re-developed to the benefit of the surrounding community. This will improve the safety of the site and reduce health threats to humans and the environment.

The removal and activities will be entirely paid for through grant funding, at no direct cost to the public. By addressing the entire site, rather than working through a piece-work approach as done in the past, costs will be reduced for contractor mobilization, demobilization, and the need to continue to compile additional data and testing.

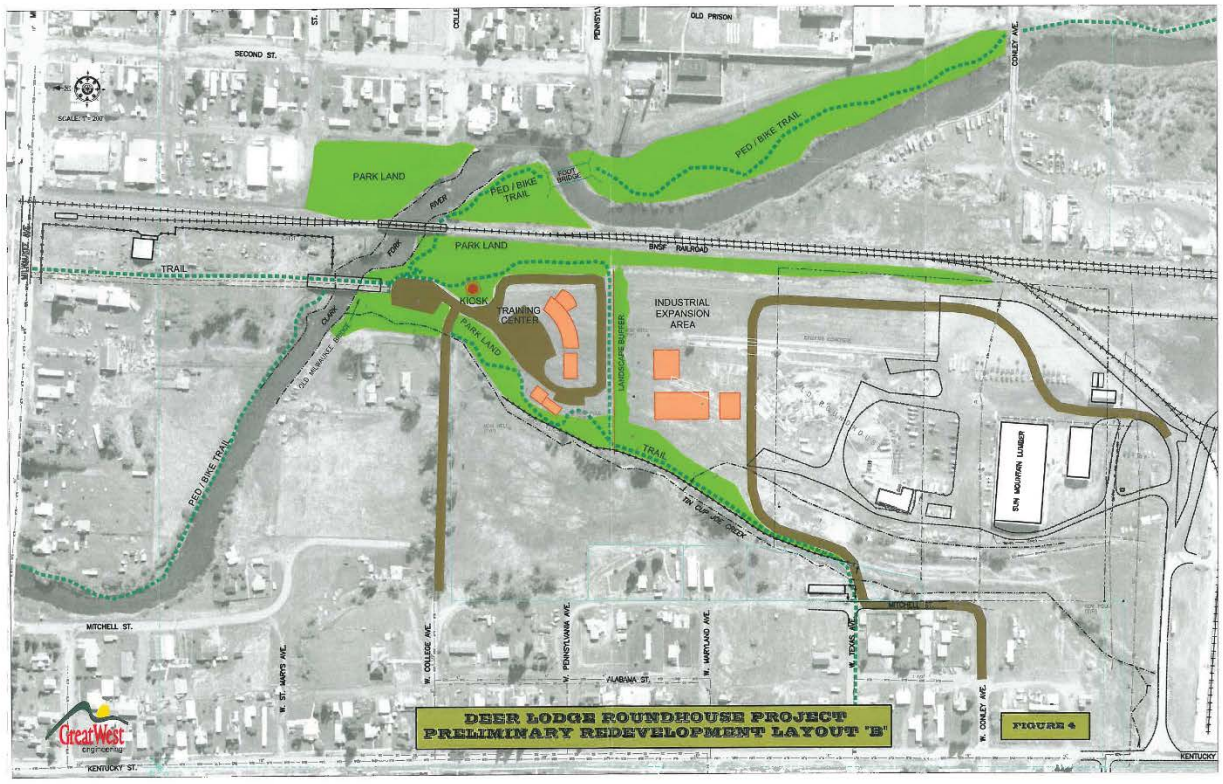
FUTURE USE

The site is a prime location for industrial development within the city of Deer Lodge. Located adjacent to a successful lumber mill, the site is bordered to the east by two active rail lines. The site has been vacant for decades and is currently unusable due to the presence of known contaminants.

The Clark Fork River runs along the eastern border of the site and previous outreach activities have indicated that the community of Deer Lodge is interested in developing green space along this boundary, likely in conjunction with an industrial end-use.

No residential uses are intended for the property.

Powell County created a redevelopment plan in 2006. The plan needs to be updated, but provides a possible redevelopment concept.



COMMUNITY PROFILE

The Milwaukee Roundhouse property is located in Deer Lodge, Montana, the Powell County seat. It lies within the Deer Lodge Valley, an open valley between the Flint Creek and Boulder mountain ranges. The property sits just west of the Clark Fork River. The population of Deer Lodge was 2,938 in the 2020 census, having steadily declined since the railroad ceased

operations in the 1980s. The cleanup of this site provides an important opportunity to create and attract new good-paying jobs to Deer Lodge.

NATURE AND THREAT TO PUBLIC HEALTH AND THE ENVIRONMENT

The current threat to public health is the exposure to heavy metals and hydrocarbon contamination in the soil by direct ingestion of the soil. Asbestos-containing concrete may be present of the site, and will be removed during the upcoming work. Removal of these materials will significantly reduce risk of exposure.

ANALYSIS OF CLEANUP ALTERNATIVES

An evaluation of cleanup options and alternatives was developed for the Remediation Proposal by Great West Engineering and Water & Environmental Technologies (WET) Engineering. A discussion follows, about potential actions.

Alternative No. 1: No Further Action (assumed as a base-case to compare to other alternatives).

Alternative No. 2: Thermal Desorption.

Alternative No. 3: Source Removal and Disposal of Contaminated Soils into a Licensed Class II Landfill.

Alternative No. 4: Low-Permeability Cover (physical barrier of contamination and impediment to infiltration).

Alternative No. 1 – No Further Action

Alternative Description: This alternative would not involve any cleanup actions and the existing/current conditions and contamination would remain in place. Given current conditions, the site could not be re-developed for recreation, residential, or commercial land use. Land use restrictions/signage would need to remain in place to keep the public from entering the property.

Protectiveness (1): This alternative would not be protective of public health, safety, and welfare and the environment since contamination would remain in place above risk-based cleanup levels for human health. This alternative would not support any designation of public use (such as recreational, residential, or commercial).

Compliance with the Environmental Cleanup and Responsibility Act (ERCL) (2): This alternative would not comply with Site Specific Cleanup Levels (SSCLs), the minimum amount permitted to remain in place based on state and federal regulations, for shallow soils and would not comply with leaching to groundwater standards (subsurface soils cleanup levels).

Mitigation of exposure to risk (3): This alternative would not mitigate exposure or risk to public health, safety, and welfare and the environment since contamination would remain in place above risk-based standards for human health.

Effectiveness and reliability (4): This alternative is not considered effective or reliable in either the short or long term since it's not protective, does not comply with SSCL's, would not mitigate exposure risk, and would continue to either pose an exposure hazard with human contact and/or continue to leach contamination into shallow groundwater over the long term.

Practicability and implementability (5): Although functionally a 'no further action' is logistically and hypothetically considered as an option for base-case comparison, it is not considered a practical or viable option given the site is listed as high priority under the Comprehensive Environmental Response, Compensation, and Liability Act (CECRA) and will eventually require cleanup actions either under a voluntary program, or if needed, under an enforcement order issued by DEQ. A no action alternative would not support the County's objectives to be protective of human health and transition the property into an asset designated for public use.

Use of treatment or resource recovery technologies (6): This alternative would not use treatment or resource recovery technologies.

Cost-effectiveness (7): This alternative does not have any costs beyond current conditions which involve limited funding/resources to declare the site as potentially hazardous and restrict public access (i.e., signage and barricades, etc). This option does not have cost for cleanup, but it is not protective nor is it cost-effective to reduce exposure or risk.

Alternative No. 2 – Thermal Desorption

Alternative Description: The basic idea of thermal desorption requires heating the contaminated soil and thereby vaporizing the contaminants with a low boiling point, collecting these contaminants, and then replacing and re-grading the remediated soil. The technology is applicable to a fairly wide variety of contamination, including hydrocarbons, such as oil refining wastes, coal tar wastes, wood-treating wastes, creosotes, chlorinated solvents, fuels, polychlorinated biphenyls (PCBs), mixed wastes, synthetic rubber processing wastes, pesticides, and paint wastes. Carbon dioxide, water vapor, and ash are emitted during the heating/vaporization process. Contractors with mobile treatment units can provide on-site treatment to contaminated soil. Once contaminated soil is thermally treated, it is tested to verify it meets soil cleanup levels, and it is then replaced back to where the source excavation occurred.

For cost assumptions, this alternative assumes the need for confirmation sampling and testing after thermal destruction to verify achievement of cleanup levels before re-placing soil back into the excavation area. Surface restoration is assumed with 4-inches of clean fill (topsoil) and seeding to re-vegetate.

Protectiveness (1): This alternative would be protective at removing hydrocarbons and volatile organic compounds (VOCs), however, the technology does not perform well at thermal destruction of toxic metals such as lead, arsenic, and cadmium. As such, the technology would not address the full suite of contaminants of concern (COCs), and thus is not considered protective for metals contamination.

Compliance with ERCLs (2): This technology would comply with selected COCs such as hydrocarbons and VOCs, however, it would not address metals contamination and as such, would likely not fully comply with achievement of metals cleanup levels for the suite of COCs.

Mitigation of exposure to risk (3): This technology would mitigate exposure and risk with selected COCs such as hydrocarbons and VOCs, however, it would not address metals contamination and as such, would not fully mitigate exposure or risk with the metals cleanup levels.

Effectiveness and reliability (4): This alternative would be effective and reliable in short and long-term for hydrocarbons and VOCs; however, it would not treat metals and as such, would be ineffective and not reliable for the full suite of COCs.

Practicability and implementability (5): The technology would be practicable and implementable as an in-situ method to address soils contamination for hydrocarbons and VOCs. However, the technology emits vapors and particulates as part of the thermal destruction process, which may involve air dispersion modeling and complicate agency approval of this technology due to air quality concerns.

Use of treatment or resource recovery technologies (6): This alternative would be considered favorable as a treatment technology to remove hydrocarbons and VOCs, however, it would not treat the metals and thus only considered partial treatment and marginally effective at resource recovery.

Cost-effectiveness (7): The total cost for this alternative is estimated at $2.1M, which is based on $2.0M for capital costs and limited costs for operation and maintenance ($15K) for a brief 2-year period following completion of the actions. Unit costs for thermal desorption were found to range from $75 to 100 per ton depending on the petroleum content, soil characteristics, and soil volumes; the unit cost of $100/CY is assumed as an average value based on literature research. The operation and maintenance for this alternative is limited to an assumed 2-year period following cleanup action to ensure the success of seeding and verify signage of the site. Qualitatively, this cost is considered high relative of marginal effectiveness since the technology does not address metal contamination in soil.

Alternative No. 3 – Source Removal and Disposal in Landfill

Alternative Description: This alternative consists of excavating contaminated soils which exceed SSCLs or exceed leaching to groundwater criteria, temporarily containerizing and hauling the contaminated soils via DOT-approved transportation means to an approved/permitted landfill, and then placing clean backfill into the excavated areas.

The approach assumes (1) need for confirmation sampling to verify depth of excavation, (2) that a suitable clean borrow source is available to haul trucks en-route back to the site from the selected landfill, and (3) after placing clean backfill that the site is restored with seeding to revegetate.

Protectiveness (1): This alternative would be protective of public health, safety, and welfare and the environment as it would remove the sources of contamination, which would prevent human contact of shallow soils, and also prevent contaminants from leaching to groundwater. The contaminated soil would be re-located and placed in a permitted landfill unit with engineering controls such as bottom liner system, leachate collection, routine groundwater monitoring and reporting program, and then upon landfill closure, the unit would be covered with a low permeable cover/cap and monitored for at least 30+ years during the post-closure care period. The confirmation sampling plan would verify final removal extent (areas) and depths, and institutional controls would protect potential receptors through limiting the types of land use that can occur.

Compliance with ERCLs (2): This alternative would comply with SSCLs for soil contamination and leaching to groundwater for the selected COCs.

Mitigation of exposure to risk (3): This alternative would create short-duration exposure to contamination and associated risks during removal actions which would occur with site workers over a relatively short duration; after removal and restoration have occurred, the alternative would mitigate exposure to risk associated with contaminated soil.

Effectiveness and reliability (4): In the short-term, the soil disturbances from excavation and site remediation activities can potentially cause short-term increases to human exposure and/or increases to leaching to groundwater. In the long-term, however, after the contamination is removed from the site, the alternative is considered effective and reliable as it would eliminate human exposure and reduce leaching to groundwater. As noted in the description, the contaminated soils would be re-located to a permitted landfill which would be effective and reliable in both short and long-term.

Practicability and implementability (5): The contaminated soils are relatively shallow (less than about 8 ft bgs) and thus relatively accessible for source removal equipment operations. In general, source removal and re-location as a site remediation technology is relatively basic in nature and is generally considered as an option for most site remediation alternative evaluations. This alternative is considered practicable, implementable, and a proven technology since it has been conducted as an interim action at the site as described in the EA.

Use of treatment or resource recovery technologies (6): This alternative is not considered as a treatment or resource recovery technology.

Cost-effectiveness (7): The total cost for this alternative is estimated at $1.5M, which is based on an estimated $1.5M for capital costs, and a limited cost for operation and maintenance ($15K) for a limited 2-year period following cleanup actions. Operation and maintenance activities assume seasonal checks for erosion and verification of success of re-vegetative growth. Qualitatively, this cost is considered moderate to high but would provide for a protective and effective long-term cleanup option.

Alternative No. 4 – Low Permeability Cover System

Alternative Description: This alternative consists of placing an engineered low permeable cover system over the contamination areas to (1) provide for a protective physical barrier to limit or minimize human contact and/or ingestion/inhalation of contaminated soil, and (2) limit and minimize the infiltration of precipitation through the uppermost contaminated soils to reduce leaching to groundwater. For costing considerations, the most conservative (lowest permeability) design would include a geosynthetic clay liner (GCL), which is a compacted clay layer sandwiched between a geotextile fabric (that exhibits low-permeability in the range of 5x10-9 cm/sec) overlain with a relatively robust, 8-inch thick layer of topsoil that is seeded and re-vegetated. Prior to placement of the GCL layer, the sub-grade would be prepped with a 6-inch-thick layer of unconsolidated, fine-grained soil intended to smooth out the existing ground surface to enhance placement of the GCL liner system. Confirmation sampling and testing would not be necessary since the contamination would remain in place underneath the protective barrier and cover system.

Protectiveness (1): This alternative would be considered protective of human health for recreational use since it would serve as a physical barrier prohibiting human contact with contaminated soils, provided that the cover system integrity is maintained and that the vegetation is established. Land use would be restricted to recreational use considering that potential zoning of residential or commercial would involve trenching/excavating for utilities, and these activities would contact and/or compromise the cover system.

Compliance with ERCLs (2): Although this technology would be considered effective at limiting the infiltration through soils, it would be deficient with regard to achieving compliance with leaching to groundwater.

Mitigation of exposure to risk (3): Similar to protectiveness, if the cover system integrity is intact and maintained for recreational use, this alternative would be effective to mitigate the human exposure to surface soils since it would serve as a physical barrier. For groundwater, there are not any close public water supply wells so human exposure from groundwater withdrawal at the site is not a potential exposure route.

Effectiveness and reliability (4): This alternative would be considered an effective and reliable physical barrier to human exposure/contact in both the short and long term, provided that a long-term operation and maintenance program was followed to maintain integrity of the cover system and repair any potential erosion issues. As noted above, the land use would be limited to recreational activities to prohibit trenching or land disturbance activities which might compromise the cover system.

Practicability and implementability (5): A low-permeability geosynthetic material and cover system technology is readily available from many vendors. Implementation of a cover system is a reasonably basic process involving subgrade leveling/smoothing, placement of cover system, revegetation, and relatively minor operation and maintenance to verify re-establishment of vegetation, check for erosion, and cover integrity. The use of a low-perm cover technology has

been most commonly implemented at permitted landfill sites and several remediation sites throughout Montana.

Use of treatment or resource recovery technologies (6): This alternative is not considered as a treatment or resource recovery technology.

Cost-effectiveness (7): The total cost for this alternative is approximately $1.6M, which is based on an estimate of $1.3M for capital improvements, and $300K for long-term operation and maintenance. The unit cost for installing a GCL liner system of $1.00 per square foot is based on the average construction costs of installing a GCL liner system at several Class II permitted landfills in Montana. Confirmation sampling and testing is not needed for this alternative since the contamination remains in-place. The long-term operation and maintenance activities are based on an assumed 30-year period to establish vegetation, check for erosion, and to perform annual checks of cover integrity. Qualitatively, this cost is considered low to moderate and provides a physical barrier of protection and mitigation of risk to human exposure, however the contamination remains in place and could be an ongoing source for leaching to groundwater.

Action Summary

Alternative 1 – No Further Action: This alternative is the least preferable, considering it is not protective, does not comply with ERCLs, does not mitigate exposure or risk, is not effective or reliable, and is not a treatment or resource recovery technology. The no further action alternative is included as a "base case" scenario to compare against other alternatives discussed below.

Alternative 2 – Thermal Desorption: This alternative ranks as favorable for criteria 6 regarding treatment and resource recovery technology, but it's protectiveness and other factors are either neutral or low since the technology does not address metals contamination as part of the COC suite. The technology would produce potentially harmful air emissions, which may complicate the ability to implement this technology with respect to agency approvals, and the cost is moderate (estimated at $2.1M which yields a neutral score).

Alternative 3 – Source Removal: This alternative is favorable for criteria 1-5, but is not a treatment or resource recovery technology (criteria 6). The cost is considered moderate (estimated at $1.5M) considering the activities involved with source excavation, confirmation sampling, hauling contaminated soils to a permitted landfill, hauling and placement of clean backfill, and topsoil restoration and seeding.

Alternative 4 – Low Permeability Cover: This alternative has some limitations on regulatory compliance with respect to leaching to groundwater since the contamination is left in place. However, the cost for this alternative is relatively low (estimated at $1.6M) to address the entire site, which is favorable for practicability and implementability. In the short-term, this alternative would serve as a physical barrier to shallow contamination which lends to a favorable score for protectiveness and mitigating risk to human exposure and limiting leaching to groundwater. In the long-term, the County would have to maintain integrity of the cover system to ensure protectiveness and mitigation of exposure from human contact, and to maintain the low-permeability characteristics to limit or impede leaching to groundwater. Since

contamination is left in place, the County would likely have to perform annual groundwater monitoring and reporting to assess potential impacts via leaching to groundwater.

Proposed Alternative

The proposed alternative is Alternative 3 (Source Removal) since it has the highest or most favorable evaluation net score considering the 7 criteria, and this action would be consistent with previous interim actions performed at the site by DEQ and others. The County wishes to perform cleanup actions for this RP commensurate with commercial worker human health cleanup levels, and understands that if this decision is changed in the future (such as land use change to residential etc), that a re-assessment of previous cleanup efforts/areas will be required in coordination with DEQ. Given past site history and existing contamination, the County does not anticipate the site being designated for residential or recreational land use.

A full discussion, evaluation, and comparison of these alternatives is provided in the DEQ-approved Remediation Proposal based on 1. Protectiveness, 2. Compliance with Environmental Cleanup and Responsibility Act 3. Mitigation of exposure to risk 4. Effectiveness and reliability 5. Practicability and implementability 6. Use of treatment or resource recovery technologies and 7. Cost effectiveness. A copy can be obtained by contacting the Powell County Planning Department:

Amanda Cooley – Planning Director

acooley@powellcountymt.gov

406-846-9729

409 Missouri Ave Ste. 114 Deer Lodge, MT 59722

PUBLIC COMMUNICATION

Headwaters RD&C staff and Powell County provide media releases to the Silver State Post informing them of newsworthy project updates.

Project updates can be provided at any time by contacting any of the project contacts listed at the beginning of this document.

Map of Location