USDA United States Department of Agriculture | Forest Service | Helena National Forest | Lincoln Ranger District
1569 Highway 200
Lincoln, MT 59639

File Code: 2160
Date: October 21, 2015

Re: Technical Memorandum: Summary of Response Action Alternatives and Recommended Response Actions for the National Forest System Lands of the Upper Blackfoot Mining Complex Site

Dear Interested Party,

Enclosed is the Executive Summary of the *Technical Memorandum: Summary of Response Action Alternatives and Recommended Response Actions for the National Forest System Lands of the Upper Blackfoot Mining Complex (UBMC) Site* for your review. The Executive Summary provides an abbreviated overview of the proposed cleanup alternatives for the federal lands portion of the UBMC and accompanies the recently released Proposed Plan for the private lands of the site issued by Montana DEQ. The complete Technical Memorandum is available on the Helena Forest website at http://www.fs.usda.gov/detail/helena/landmanagement/planning/.

Comments on the Technical Memorandum are requested by November 23, 2015. They may be emailed to: comments-northern-helena-lincoln@fs.fed.us with "UBMC Technical Memorandum" on the subject line, hand delivered to the Helena Forest Supervisors' Office or mailed to the Helena Forest Supervisors' Office at 2880 Skyway Drive, Helena, MT 59602. For more information contact Steve Opp at (406) 495-3716.

Sincerely,

MICHAEL STANSBERRY
Lincoln District Ranger

Cc: Bob Wintergerst, Northern Region
Steve Opp
Catherine Pinegar
Dave Bowers, Montana DEQ
Beau Downing, Montana DOJ NRD Program

Upper Blackfoot Mining Complex

Technical Memorandum Executive Summary Oct 2015

Helena National Forest
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Helena, MT 59602
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1569 Highway 200
Lincoln, MT 59639

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October, 2015

EXECUTIVE SUMMARY: Technical Memorandum: Summary of Response Action Alternatives and Recommended Response Actions for the National Forest System Lands of the Upper Blackfoot Mining Complex Site, including the Upland Waste Areas, Groundwater, Surface Water and Stream Sediment, Upper Marsh, and Mining Related Features Evaluation Areas

The USDA Forest Service-Helena National Forest has prepared this Executive Summary of the Technical Memorandum: Summary of Response Action Alternatives and Recommended Response Actions for the National Forest System Lands of the Upper Blackfoot Mining Complex Site, including the Upland Waste Areas, Groundwater, Surface Water and Stream Sediment, Upper Marsh, and Mining Related Features Evaluation Areas for the cleanup of the remaining contaminated areas on the federal lands of the Upper Blackfoot Mining Complex site (UBMC). The UBMC site is located in the historic Heddleston mining district located in the headwaters of the Blackfoot River. The mines of the area were operated and produced mining-related wastes over a period of about 70 years. The Technical Memorandum accompanies the recently released Proposed Plan by Montana DEQ that identifies the cleanup alternatives and proposed plan for the private lands of the UBMC site. Together the two agency's proposed plans will complete the cleanup of the site. Previous decisions by the Forest Service and DEQ resulted in the construction of the Section 35 repository site which was initiated in 2012, and by the Forest Service in 2007 which resulted in the ongoing removal of the Mike Horse dam and tailings impoundment. These actions complement older interim responses led by the DEQ. The UBMC site is located about 16 miles east of Lincoln, Montana in Lewis and Clark County and includes a mixed landownership pattern (see Figure 1).

The Technical Memorandum was prepared to satisfy the agency's requirements under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA; 42 USC 9604) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP; 40CFR Part 300).

The Forest Service, Montana Department of Environmental Quality (DEQ) and Department of Justice Natural Resource Damage Program have been working together on the cleanup of the Upper Blackfoot Mining Complex for many years. This effort will result in agency decisions that will guide cleanup activities at the site for the foreseeable future.

Contamination on Federal Lands

Contamination at the UBMC site is related to the site's geology, mineralization and mining history. Contaminants are primarily metals including arsenic, aluminum, cadmium, copper, lead, manganese and zinc. The metals occur in mine waste materials such as waste rock and tailings, and in soils, groundwater, surface water and sediments in streams, and the Blackfoot River marsh area at the junction of Pass Creek. Risk evaluations for human health and the aquatic and land species of the site were performed to determine appropriate cleanup levels based on the types of future anticipated land uses, and the known aquatic species of the site. Risk evaluations identified that the UBMC contaminants pose the greatest risk to aquatic species while human health risks varied depending on the location of the contaminated media and the level of metals found, particularly arsenic and lead. The identified risks were determined to be unnacceptable and cleanup is necessary.

Contaminated Features on Federal Lands of the UBMC site

The contaminated features that occur on the federal lands of the UBMC site, excluding the Mike Horse dam, impounded tailings, and floodplain wastes in the Beartrap, Mikehorse and upper Blackfoot River drainages that were addressed in the 2007 Action Memorandum, were combined into five Evaluation Areas (EAs) to streamline the development of remedial alternatives. The EAs and the affected media are defined as follows: EA 1 - Upland mine wastes, EA 2 - Groundwater in the Upper Marsh area, EA 3 - Surface water streams and the sediments within them, EA 4 - Upper Marsh area, and, EA 5 - Mining related features such as upland adits, waste piles, etc. These same EAs were used by DEQ to develop and screen alternatives for the private lands of the site. See Figure 3-attached-from the Technical Memorandum which is an overview of the components of the Evaluation Areas of the site.

Remedial (Cleanup) Alternatives

Cleanup alternatives were developed to respond to the affected contaminated media and were evaluated against performance criteria including protectiveness of human health and the environment, compliance with federal and state requirements, mitigation of the risk posed by the contaminated media, effectiveness of the response action in the short and long term, practicability of the technology and cleanup approach, and cost effectiveness. The retained suite of alternatives that were applicable on federal lands include:

Alternative 1: No Action – All identified contamination remains at the UBMC and continues to impact soil, ground and surface water and environmental receptors. Applicable to all EAs.

Alternative 2: Monitored Natural Recovery – Uses naturally occuring processes along with source removal to reduce contaminant concentrations in *sediment* over time. Applicable to EA 3 and 4.

Alternative 3: Physical Barriers – Adit openings or related physical safety hazards associated with Mining Related Features would be closed using a physical barrier. Applicable to EA 5.

Alternative 4: Containment – Soil and marsh sediment would be contained by covering with soil or rock

and establishing vegetated cover where soil is used to eliminate risk. Applicable to EA 1, 4 and 5.
Alternative 5: Removal and On Site Disposal – Solid media exceeding cleanup levels would be removed, and transported to the Section 35 repository site for disposal. Applicable to EA 1,3,4 and 5.
Alterative 6: Removal and Off Site Disposal – Same as Alternative 5 with transport to an off site disposal facility. Applicable to EA 1, 3, 4, and 5.
Alternative 7: In situ (in place) Neutralization and Amendment – Solid media exceeding cleanup levels would be treated in place with a lime agent to reduce mobility and bioavailability of metals. Applicable to EA 1 and 5.
Alternative 8: Ex situ (not in place) Neutralization and Amendment – Solid media exceeding cleanup levels would be excavated and treated at a designated place with a lime agent to reduce mobility and bioavailability of metals and returned to the original area. Applicable to EA 1 and 5.
Alternative 9: Monitored Natural Attenuation – Uses natural processes along with source removal to reduce contaminant concentrations in groundwater over time. Applicable to EA 2 and 4.
Alternative 10: Containment – Seeps and springs would be captured and allowed to infiltrate or evaporate in some type of retention facility. Applicable to EA 3.
Site Wide Elements is a response option applicable to any of the action alternatives for the site and includes monitoring and maintenance, engineering controls and institutional controls. These options will be applied as needed, regardless of alternative and in some cases will be the preferred response for a contamination feature at the site.

Proposed Cleanup Alternatives for the Federal Lands

The proposed cleanup alternatives for the federal lands of the site are individual or combinations of the above discusssed alternatives. They are as follows:
EA 1 – Upland Mine Wastes – Alternative 5 Removal and On-site Disposal
EA 2/4 – Groundwater in the Upper Marsh – Alternative 9 Monitored Natural Attenuation
EA 3 – Streams and Stream sediments – The streams of the UBMC would have a mix of site wide elements, and monitored natural recovery. These responses rely on monitoring removals already conducted or identified for removal in another EA, and only implementing other alternative responses where data shows that further actions are needed.
EA4 – Upper Marsh sediments including the Blackfoot River sediments – For the eastern portion of the Upper Marsh and Blackfoot River sediments the proposed response is Alternative 5 Removal and On-site Disposal. For the western portion of the Upper Marsh, the proposed response is Alternative 2 Monitored Natural Recovery and Site Wide Elements. For the surface water in the Upper Marsh, the proposed response is site wide elements.
EA5 – Mining Related Features – Alternatives 3 and 5 and Site Wide Elements

The proposed response actions may be modified due to changes in site conditions, new information, or as a result of detailed design activities. The total cost for the proposed response actions on federal lands

identified above, including operations and maintenance is estimated at $7,124,000.

Where to Find More Information

The Technical Memorandum: Summary of Response Action Alternatives and Recommended Response Actions for the National Forest System Lands of the Upper Blackfoot Mining Complex Site, including the Upland Waste Areas, Groundwater, Surface Water and Stream Sediment, Upper Marsh, and Mining Related Features Evaluation Areas (Technical Memorandum) provides an overview and summation of extensive data collection and analysis conducted by DEQ over the entire UBMC site over many years. It is available on the Helena National Forest Website at (http://www.fs.usda.gov/detail/helena/landmanagement/planning/?cid=stelprdb5383341), or hard copy by emailing or calling Steve Opp (406) 495-3716, sopp@fs.fed.us, or at the Lewis and Clark or Lincoln librarys. More detailed documentation for both the federal and private lands of the UBMC is found in the Draft Final Feasibility Study Report for the Upper Blackfoot Mining Complex (Pioneer, 2015) and other documents incorporated by reference. These documents are available on the DEQ project website at (http://www.deq.mt.gov/StateSuperfund/UBMC/default.mcpx).

How to Comment

A public comment period for the document begins on October 22nd and will end on November 23rd at 11:59 p.m. MST. Written comments on the Technical Memorandum can be submitted one of three ways:

- Regular (USPS) mail to: Helena National Forest, ATTN: UBMC Project Manager, 2880 Skyway Drive, Helena, MT 59602;
- E-mail to: comments-northern-helena-lincoln@fs.fed.us with "UBMC Technical Memorandum" in the subject line;
- Hand-delivered at the public meeting at the Lincoln Community Hall at 404 Main Street, Lincoln, Montana on Wednesday, October 28th at 7 p.m.

THANK YOU FOR YOUR INTEREST IN THIS PROJECT!