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Ref: 8EPR-SA

ACTION MEMORANDUM

SUBJECT: Documentation of a Removal Action at Standard Mine near Crested Butte, Gunnison County, Colorado, and to request an exemption from the $2M and 12-month Statutory Limits pursuant to the "Consistency Exemption" found at 40 CFR 300.415(b)(5)(ii).

FROM: Paul R. Peronard, On-Scene Coordinator 6/27/06
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THROUGH: Johanna Miller, Supervisor
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TO: Max H. Dodson, Assistant Regional Administrator
Office of Ecosystems Protection & Remediation

Site ID#: 08JM

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of a combined initial Removal and exemption from the $2 million and 12-month statutory limits for the Removal Action described herein for the Standard Mine Site (the "Site") in Gunnison County, Colorado (See Attachment 1). This Action Memo provides a detailed description of the threats and planned response actions for this 2006 construction season at the Standard Mine to mitigate the release of hazardous substances that pose significant threats to public health and welfare and the environment. However, as discussed further in this Action Memo the logistical constraints of the short construction season and needed infrastructure improvements dictate that response actions be conducted in phases and thus likely continued into the next year, 2007.

The Site is currently on the National Priority List ("NPL") and the Removal Program has been coordinating extensively with the Site Remedial Project Manager. Therefore, these Removal Actions will be appropriate and consistent with the anticipated Remedial Action to be taken. If further continuation of the Removal Action is needed, or if there is a need for an

expansion in scope, this will be described in more detail in an amendment to this Action Memorandum.

This Removal Action addresses the need to mitigate threats to the environment and to the public drinking water source for the Town of Crested Butte. The threat is posed by high concentrations of lead, arsenic, zinc and cadmium and other metals in waste piles from abandoned mining operations within the Site boundaries. These piles contribute loading of heavy metals into Elk Creek, which then subsequently loads into Coal Creek. The drinking water intake for the Town of Crested Butte lies downstream on Coal Creek. The elevated levels of contamination in the waste piles and tailings impoundment, which are actively eroding into Elk Creek; the unsecured nature of the situation; the potential for future failure of the tailings impoundment resulting in mass loading of metals-laden tailings into Elk Creek; and the requests of the Remedial Program dictate a Time-Critical Removal Action. Site conditions meet the criteria for initiating a Removal Action under 40 CFR Section 300.415(b)(2) of the National Contingency Plan ("NCP") and meet the requirements for exemption from the $2 million and 12-month limits.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal site evaluation

The CERCLIS ID number of the Site is 08JM. Site conditions are such that this Removal Action is classified as Time-Critical.

The Site is located in the Ruby Mining District within the boundaries of the Gunnison National Forest and consists of United States Forest Service ("USFS") land, as well as patented mining claims. It is approximately 30 miles northwest of Gunnison, Colorado and five miles west of the Town of Crested Butte in a remote location at an elevation over 11,000 feet above mean sea level. The Site is distinctly sloped, with grades exceeding 11%. Currently the Site is used for recreational purposes (e.g. hiking) and has no access restrictions. However, it is difficult to reach the Site except during the summer months.

Historically the area was mined for zinc, lead, silver, gold and copper. The result is multiple waste rock piles, an area containing milling wastes, and a large tailings impoundment (approximate capacity 250,000 gallons). All of these units contain heavy metals such as cadmium, zinc, lead and copper. The Site also contains several adits, with at least three having some discharge of mine drainage, the heaviest flowing at over 100 gallons per minute.

The Site is effectively bisected longitudinally by Elk Creek. Elk Creek originates upslope from the Standard Mine, and then flows through the Site, directly contacting several waste piles, and moving along the toe of a large tailings impoundment. The adits on the Site with flowing water discharge either directly into Elk Creek, or through waste piles and then into Elk Creek, or adjoining

wetland areas. A large portion of run-off from the Site currently routes through the tailings impoundment, which also discharges directly into Elk Creek. After leaving the Site proper Elk Creek flows into Coal Creek, which is the main source of drinking water for the Town of Crested Butte (See Attachment 1).

The EPA performed a Preliminary Assessment ("PA") on the Ruby Mining Districts South and West in 1999. The PA documented impacts to surface waters due to tailings and waste materials found in the Coal Creek Drainage, and also documented the presence of federal and state listed endangered species inhabiting the area (See URS Preliminary Assessment, p. 13-14, in the Site Administrative Record ("AR")). In 2000, EPA conducted and released an Expanded Site Inspection of the Ruby Mining District and in 2005 released a Hazard Ranking System ("HRS") Documentation Report. The USFS conducted an Engineering Evaluation / Cost Analysis ("EE/CA") of the Site in 2002. The data from these documents, all included in the Site Administrative Record, indicate that the Standard Mine Site is negatively impacting the Coal Creek Watershed, and Elk Creek in particular. Overall these studies have documented the elevated levels of heavy metals in surface water, sediment, soil, and groundwater. The Site was added to National Priorities List on September 4, 2005 (See EPA Site Narrative, Site AR).

Because of concerns with the ongoing release of hazardous substances from the Site and their apparent impact on the watershed, the Remedial Program requested a Removal Assessment in 2005. Over the summer and fall of 2005 the Removal Program further characterized the metals levels in the various waste units and adit flows, as well as assessed the leachability and acid generation potential of the wastes found on-site. The sampling activities confirmed that the elevated metal levels found on-site were subject to leaching, and that most of the samples of waste rock, mill wastes, and tailings had a high potential to produce acidic drainage (See URS Sampling Activities Report, Site AR). In addition, a preliminary structural integrity assessment of the tailings pond was conducted. The assessment of the tailings impoundment found that an elevated phreatic surface potentially existed within the tailings dam, possibly undermining the structural integrity of the impoundment. However, no immediate actions were recommended by the evaluating engineer pending a more detailed analysis involving borings into the dam (See URS Sampling Report, Appendix D, Site AR).

2. Physical location

The Site is located in the Ruby Mining District approximately 30 miles northwest of Gunnison, Colorado and five miles west of the Town of Crested Butte at an elevation of 11,000 to 11,600 feet above mean sea level and is within the Coal Creek watershed. More specifically, the Site is located in Section 35, T. 13 S., R. 87 W. at the 6th Principle Meridian in Gunnison County, Colorado. The Site is within the boundaries of the Gunnison National Forest.

3. Site characteristics

The Site consists of several uncontrolled adits and shafts giving access to 8400 ft. of open mine workings on six levels. The main level, level one, of the Site contains multiple waste rock piles, a mill waste area, and a tailings impoundment up-slope and along Elk Creek. Various reports have estimated the volume of waste material at the site; this has ranged between 55,800 cubic yards (cy) (See SAIC EE/CA, p. 5 in the Site AR) to 90,800 cy (See URS Sampling Activities Report, p. 4, Site AR). There are adits at several levels of the mine that discharge to surrounding wetlands and Elk Creek. There is also evidence of seepage and overflow from the tailings impoundment to Elk Creek. However at this time the total amount of heavy metals loading from these features is not fully defined. Additionally, Elk Creek flows to Coal Creek, which is the location for the primary drinking water intake for the Town of Crested Butte, thus contributing to releases of hazardous substances into a drinking water supply.

Currently the site is a popular destination for hikers, mountain bikers, and motorcyclists.

Standard Metals Corporation operated the mine until 1962 and continues to own the majority of private claims associated with the mine. The US Forest Service is a trustee of land associated with the Site as well. The Remedial Program is actively working with the USFS on a cost share arrangement to fund the cleanup effort, and will be working cooperatively with the State.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Lead, arsenic, zinc and cadmium have been identified as the contaminants of concern and occur at concentrations well above background levels in the area. All of these are listed hazardous substances, as defined by 40 C.F.R. § 302.4. The threats posed by this Site include: ingestion of potentially contaminated plants and fish; the inadvertent ingestion of contaminated soil, groundwater, and surface water; and the high concentrations of metals periodically loading into Elk Creek. The impacts to the water quality in Elk Creek are of special concern considering this stream flows to Coal Creek, which is the primary source of drinking water for the Town of Crested Butte. Contaminated soil and waste rock is transported from the Site down gradient into other areas and into the nearby surface waters, as well as areas that are used for fishing, swimming, camping, and general recreation.

Lead, zinc and cadmium are the contaminants found in the greatest concentrations at the site but there are other metals present, such as arsenic that pose a threat. Looking at the most recent sampling conducted by START in October 2005 (See URS Sampling Activities Report, Site AR) water and soil samples were collected to help characterize threats at the Site. XRF analysis was completed on waste rock and mill tailings samples, which detected lead concentrations ranging from 1,500 mg/kg to 38,000 mg/kg. This analysis also

showed zinc concentrations to range from 410 – 11,000 mg/kg and copper concentrations ranged from ND to 6700 mg/kg. While arsenic concentrations determined by XRF were below the detection limit due to interferences from other metals, the detection limit was well elevated (1900 mg/kg) (URS Sampling Activities Report, p. 11, Site AR). Laboratory results of one sample collected from a waste rock pile showed arsenic to be present at a concentration of 323 mg/kg. Overall, the URS sampling results were entirely consistent with previous sampling efforts at the Site. All of the environmental investigations conducted at the Standard Mine Site to date show that the waste bearing units at the Site contain very elevated concentrations of heavy metals.

These heavy metals have apparently migrated downstream from the Site as well. Data included in the Screening Level Ecological Risk Assessment ("SLERA") found in the Site AR shows that heavy metals have accumulated in the sediments of Elk Creek and in Coal Creek, downstream of where Elk Creek enters Coal Creek. Stream sediments within the Coal Creek Watershed contain lead concentrations ranging from 65.0 to 7900 mg/kg; zinc from 250 to 6900 mg/kg; copper from 11.0 to 1700 mg/kg; cadmium from 1.8 to 68 mg/kg; and arsenic from 9.2 to 170 mg/kg. These values are generally well above regional background. The transport mechanism for these contaminants appears to be from the mechanical scouring of the waste units at the Standard Mine and other mines located within the Ruby Mining District.

The 2005 URS investigation also included Synthetic Precipitation Leaching Procedure ("SPLP") analysis and Acid Base Accounting ("ABA") on the waste samples. These analyses help determine the potential of the waste rock and other mine wastes to generate acid that could leach heavy metals from the rocks and soils, allowing them to migrate into ground water and/or surface water. Based on the SPLP results, zinc was found in the highest concentrations (ranging from 0.21 – 53 mg/L) and in the greatest number (all 13) of the samples. Lead was also found in the leachate in 10 of the 13 samples and ranged in concentrations from ND to 17.0 mg/L. Copper and cadmium were also detected in the leachate in 3 of the 13 samples tested, with levels up to 0.33 mg/L. For all contaminants detected, the lowest concentrations occurred in the samples collected from the mill tailings.

The ABA yielded a Net Neutralization Potential that was generally less than minus 20 (-20), which is indicative of acid generating rock (URS Sampling Activities Report p. 10-12). This is entirely consistent with the lower pH values found in surface waters around the Site, which range from 2.73 to 6.22 (URS Sampling Activities Report, Table 3).

Adit discharge water samples were collected and analyzed for total and dissolved metals. Total metal concentrations for lead ranged from 160 – 1,220 µg/L; concentrations for zinc ranged from 1,070 – 26,600 µg/L; concentrations for cadmium were between 26 – 170 µg/L. Levels of these contaminants in a dissolved phase ranged from ND to 500 µg/L for lead; 650 – 19,100 µg/L for zinc;

and 28 – 150 µg/L for cadmium. Arsenic was not detected in any samples analyzed for total or dissolved metals (URS Sampling Activities Report, Table 1-2). These values, as well as those reported historically from surface water around the Site, exceed Superfund Chemical Data Matrix criteria for lead, cadmium, arsenic, copper, and zinc (See URS Sampling Activities Report, Table 3) in some cases by two orders of magnitude. Ambient Water Quality Standards for this segment of the stream have been established by the Colorado Department of Public Health & Environment ("CDPHE"). Presently the metals loading from the adit discharges and run-off from tailings and waste rock piles are causing Elk Creek to exceed these standards (See EPA Spring 2005 Sampling Results and Fall 2005 Sampling Results in Site AR). In addition to the START sampling event and the EPA sampling events referenced, other detailed data sets documenting the concentrations of the heavy metals and other hazardous substances in the waste piles, surrounding soils, and surface water can be found in the SI Report and the HRS Scoring Package. All of which are located in the Administrative Record.

5. NPL status

This Site is currently a NPL Site; it was listed in the Federal Register on September 4, 2005. A Remedial Investigation / Feasibility Study ("RI/FS") is in progress, and a Record of Decision ("ROD") for the Site is anticipated in 2007 or thereafter. However, the Removal Program has engaged in close coordination with the Remedial Program to ensure inter-operability of data and on-site actions. The preliminary steps outlined in Section VI of this Action Memorandum will be consistent with the anticipated Remedial Actions.

6. Maps, pictures, and other graphic representations

Maps detailing the Site location as well as Site features be found in Attachments 1 and 2. Photographs of the complexes subject to this action can be found in Appendices C and D, Photolog and Dam Stability Report, respectively, of the URS Sampling Activities Report. Additional photographs of the Site can be obtained from the Site File.

B. Other Actions to Date

1. Previous actions

There have been no previous EPA Removal Actions at this Site. However in October 2005, EPA began a removal site evaluation at the site that included collection of soil and surface water samples to begin to assess the concentration of contaminants on-site and options for stabilization and removal of mine features.

2. Current actions

Currently there are no actions occurring on-site but the concurrent Removal and Remedial Program investigations. These investigations, as well as other Site planning activities, are being discussed with the local community, the Town of Crested Butte, and the State of Colorado.

III. THREATS TO PUBLIC HEALTH OR WELFARE OF THE ENVIRONMENT, AND SATURATORY AND REGULATORY AUTHORITIES

A. Threats to Public Health

1. Threats to Public Health or Welfare

The threats to public health and welfare take on two general forms: heavy metals loading into Coal Creek, the primary supply of drinking water for the Town of Crested Butte; and the potential for direct contact with the mining wastes by recreational users. The high concentrations of lead, arsenic, zinc and cadmium and other metals found at the Site also have an increased potential to migrate from the site through acid mine drainage and scouring of the waste units during spring snowmelt. Exposures to these metals could lead to numerous health effects such as delayed mental and physical development in children, kidney damage, skin damage, problems with the circulatory system and an increased risk of cancer as sited in the 2004 National Primary Drinking Water Regulations, 40 C.F.R 141 Subpart O Appendix A.

Due to the high concentrations of lead, arsenic, zinc and cadmium and other metals found in the waste piles and run-off from the abandoned mine features, conditions at the Site may present a threat to public health or welfare, and meet the criteria for initiating a Removal Action under 40 CFR § 300.415 (b)(2) of the NCP. The following factors from Section 415 (b)(2) of the NCP form the basis for EPA's determination of the threat presented, and the appropriate actions to be taken:

(i) *Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;* The Site is a popular destination spot and receives foot, auto, and ATV traffic from recreational users. Because the Site currently has no access restrictions these people can come into direct contact with any of the materials in the waste units on the Site. Thus the potential threat of direct exposure exists through the inhalation and ingestion of soils and/or water contaminated with heavy metals.

(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems; As discussed earlier the site feeds heavy metals into nearby surface waters, particularly Elk Creek, which subsequently flow directly into Coal Creek. Coal Creek is the primary public drinking water source for the town of Crested Butte. The Town of Crested Butte currently treats the water drawn from Coal

Creek using a micro-filtration plant. Because of concern caused by the potential presence of the heavy metals in the water supply the Town bears additional expense for upgrading their treatment facility to incorporate treatment trains for metals removal and metals analysis. It is also possible that in the event of a catastrophic release from the Site (e.g. if the tailings dam failed) the sediment and subsequent metals loading into Coal Creek would be high enough to limit its use.

(iv) *High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate*; There are high levels of heavy metals distributed over the majority of the surface of the Site. These metals are present in the various waste piles, the mill area, and the tailings impoundment. These units are clearly impacting Elk Creek and downstream. Because of the steep terrain, erosion from the Site allows the metal contaminated sediments to move down the watershed.

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; The Site sits at an elevation over 11,000 feet in a mountainous region that averages above 300 inches of snowfall per year. This results in a high energy spring snowmelt that exacerbates the erosion and transport of heavy metals from the Site. Snowslides and avalanches are also common in the area.

(vi) *The availability of other appropriate federal or state response mechanisms to respond to the release*. Because of the volume of waste and the anticipated costs of its remediation, the CDPHE does not readily have the funding to mitigate the release of hazardous substances from the Site. Because a portion of the Site is located in a National Forest, the USFS is participating in the Site clean-up. However, their funding and authority only addresses the publicly owned portions of the Site. For the private lands in question, no viable PRPs have been identified to date. Therefore, an EPA lead action is required to address the releases from the Site.

B. <u>Threats to the Environment</u>

At this time a Screening Level Ecological Risk Assessment ("SLERA") has been performed, although specific threats to wildlife and plants have not been completely evaluated. However, zinc and other metals found at the site do present a known danger to macro-invertebrates and other aquatic life in streams. With the high levels of zinc found in the adit drainages, and in the soils/waste units on-site, and given their proximity to Elk Creek, it can be deduced that the Site has been loading contaminants into Elk Creek for some time. It is also clear that this loading has had a negative impact on the aquatic environment of Elk Creek as well. Elk Creek was reported to be nearly "devoid of any aquatic life" according to the Colorado Geologic Survey (See URS Preliminary Assessment, p.10, Site AR). Also of concern are other wildlife species in the adjacent habitats that are listed as federal and/or state endangered species such as the lynx, the Bald Eagle, the northern leopard frog and the Colorado River cutthroat trout (See URS

Preliminary Assessment p. 13-14, Site AR). Additionally any fish in the confluent waters could be exposed to metals contamination either through direct contact with the effluents, standing water, sediments, or indirectly through consumption of organisms (algae, aquatic insects, or animals) feeding in the area.

The SLERA preliminarily concluded that the concentrations of arsenic, cadmium, copper, lead, and zinc in sediments and surface water of both Elk and Coal Creeks are at levels that are likely negatively impacting the riparian ecosystem.

Because of the high concentrations of lead, cadmium and other metals found in the waste piles and run-off from the abandoned mine features, conditions at the Site present a threat to the environment, and meet the criteria for initiating a Removal Action under 40 CFR § 300.415 (b)(2) of the NCP. The following factors from Section 415 (b)(2) of the NCP form the basis for EPA's determination of the threat presented, and the appropriate action to be taken:

(i) *Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;* As discussed above, the Standard Mine Site is actively releasing heavy metals into Elk Creek. This is likely adversely affecting aquatic life at all trophic levels in Elk Creek, and possibly down in Coal Creek as well. There also exists the possibility of exposure of terrestrial fauna to the elevated levels of heavy metals on the surface of the Site, as well as through the ingestion of contaminated water (See SLERA).

(iv) *High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate*; Contaminants from the Site have already migrated down Elk Creek into Coal Creek. Heavy metals have been found to be accumulating in the sediments of Coal Creek (See SLERA). If not abated this loading will continue and further disrupt the aquatic ecology of the watershed.

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; The Site sits at an elevation over 11,000 feet in a mountainous region that averages above 300 inches of snowfall per year. This results in a high energy Spring snowmelt that exacerbates the erosion and transport of heavy metals from the Site. Snowslides and avalanches are also common in the area.

(vi) *The availability of other appropriate federal or state response mechanisms to respond to the release.* Because a portion of the Site is located in a National Forest, the USFS is participating in the Site clean-up. However, their funding and authority will only addresses the publicly owned portions of the Site. For the private lands in question, no viable PRPs have been identified to date. Therefore, an EPA lead action is required to address the releases from the Site.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the Removal Action described in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

A. Consistency Exemption

Exemption from the $2 million and 12-month statutory limits for the Removal Action described herein is necessary and appropriate to mitigate release or threat of release of heavy metals into Elk Creek, and Coal Creek downstream. The need for this exemption is two-fold: first is a matter of timing; and the second is for the anticipated long-term removal costs. As to the timing, the clean up will be greatly hampered by the extremely short construction season. Due to the elevation and alpine climate at the Site, snow normally limits working access until around mid-June. Likewise, autumn snows normally begin in earnest by early October and it is generally unwise to count on access past this. This results in a construction season of little over three months in a normal year. This will therefore necessitate a phased approached for the implementation of any Removal work, extending the timeline beyond 12 months.

For the first construction season (Summer 2006) the anticipated clean-up costs are below $2 million. However, in close coordination with the Remedial Program and the USFS, the Removal Program is currently undertaking an evaluation of long-term source control actions for the waste materials in the various units (e.g. waste piles or tailings pond). Although it is planned that a range of potential options will be evaluated in an EE/CA, the most likely candidate is the siting of a nearby repository. At this time the total cost of constructing a repository and completing the waste disposal is unknown. But given the volume of waste material, as well as the logistics of operating at this Site, it is likely that the longer term Removal costs would exceed $2 million.

The NCP at 40 CFR 300.415(b)(5)(ii) allows for an exemption of these normal statutory limits if:

> "Continued response action is otherwise appropriate and consistent with the remedial action to be taken"

While a ROD for the Site is not yet completed, the mitigation activities contemplated for this season and the consolidation of waste materials are fairly universal actions for mine sites similar to Standard Mine. In fact, in 2002 the USFS drafted a preliminary EE/CA addressing the relocation of mining wastes on its portion of the Site to a nearby repository. Also, given the steep terrain and the fact that Elk Creek currently runs directly through or adjacent to almost all of the waste units on site, it is easy to foresee the need to relocate the wastes. The Removal Program has already taken steps to coordinate its investigation activities to help support the development of the Remedial Investigation. In a like fashion there will also be direct coordination on the development

of a suitable disposition of the source materials. This approach will also allow for ample community and stakeholder input to the project. For these reasons the Removal Actions taken at this Site will be both "appropriate and consistent" with the anticipated remedial actions. Given that, the proposed approach meets the criteria for the "consistency exemption" to the $2 million and 12 month statutory limits of quantities of material to be used.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The proposed actions are designed to mitigate the current and on-going releases of hazardous substances from the Site as well as facilitating the implementation of long-term source control. The proposed removal action for the Site covered by this action memo is described below in paragraph a., Release Mitigation. This work is intended to mitigate some of the on-going releases at the Site and is time-critical in nature. The work described in paragraph b., Investigation/Design Work, is investigatory and/or design oriented and is intended to characterize the nature and extent of source material to allow for a more thorough assessment of clean-up options. Some of this work is already underway. It is anticipated this investigative work will support long-term source control measures for the Site to be undertaken by EPA at a future date; these are described subsequently in section 2, "Potential action description." A more detailed discussion of proposed & potential activities can be found in the Conceptual Project Plan ("CCP"), included in the Site AR, but generally the work includes:

a. Release Mitigation

(i) Road improvements to enable vehicles and other equipment to access the site. Road re-grading and widening will be necessary to mobilize equipment to the site;

(ii) Relocation of on-site debris. General "policing" of the Site will be done to move general debris, not waste material, from the work areas;

(iii) De-water the tailings impoundment. This will stop the overflow of tailings laden run-off into Elk Creek; reduce and/or eliminate seepage from this feature into Elk Creek; and prepare the tailings impoundment for subsequent removal;

(iv) Re-contour the topography on-site to divert surface water run-off away from the source areas to further enhance stability of the area and reduce loading to Elk Creek;

(v) Install erosion control features to reduce the scouring of the waste units into Elk Creek;

(vi) Re-route the adit drainage from "Level 1" of the mine, possibly through a lime rock swale, in order to reduce the metals loading of this drainage and to elevate its pH;

(vii) Construct a protective system (possibly via piping) to shield Elk Creek

from direct contact with the mine waste units and contaminated soils found on site;

(viii) Construct a water treatment system to handle the water from the de-watering of the tailings impoundment;

(ix) Restore power and phone service as needed.

b. Investigation/Design Work

This work is being done under CERCLA 104(b) authority. It is investigatory and/or design oriented and is intended to characterize the nature and extent of source material to allow for a more thorough assessment of clean-up options. Some of this work is currently underway and will continue through the 2006 construction season, parallel the mitigation work discussed in section a. above.

(i) Conduct high resolution imaging of the Site to produce an accurate digital plan view of the Site. This will allow for the use of GIS manipulation of data and design information as well as the ability to overlay Site features and property boundaries;

(ii) Survey work to delineate mine claims, property boundaries, and Site features;

(iii) Evaluation of potential repository sites. Currently START is conducting a preliminary GIS evaluation of potential repository sites that will be ground truthed this field season;

(iv) Develop an alternative analysis of potential repository sites with appropriate design considerations;

(v) Evaluation of inner-mine workings to determine the extent of ground water interactions with mine workings and characterize and locate ground water inflow points which influence adit drainage;

(vi) Locate the source of culvert drainage near the historical mill features;

(vii) Conduct a thorough nature and extent sampling to delineate the true extent of impacted areas, and thus provide better data for the calculation of waste volumes.

2. Potential action description

These tasks would be conducted at some future date at the Site. The information gathered during the work conducted in section b. above would support these long-term source control measures. However, this work would be addressed in an Action Memo Amendment or new Action Memo for the Site; these tasks are NOT included as part of this Action Memo.

(i) Construct a permanent waste repository and associated infrastructure if determined to be appropriate;

(ii) Excavate source waste materials and transport them to an appropriate disposal location;

(iii) Complete Site restoration/re-vegetation for impacted areas.

3. Contribution to Remedial performance

The proposed action will support and compliment any future Remedial Actions. Redirecting surface water from the source material and de-watering the tailings impoundment will reduce the overall mass loading to Elk Creek. In order to reduce the metals loading from the discharging adits, further investigation is needed to fully understand the extent of the problem. It is also anticipated that whatever repository location is found it will most certainly be used to support the excavation and removal of mine wastes throughout the Site. Moreover, any evaluation of a repository would include design review and cost analysis similar to an EE/CA.

4. Description of alternative technologies

No alternative technologies are currently proposed for this Removal Action.

5. EE/CA

The mitigation items scheduled for Summer 2006, those listed under section 1a. and 1b. above are considered time-critical, and hence, no new EE/CA is required. An appropriate alternatives analysis will be prepared for the determination of the most suitable method to affect source control measures for the Site. When this analysis is completed a more detailed discussion of these actions will be addressed in an Action Memorandum Amendment.

6. Applicable or relevant and appropriate requirements (ARARs)

A detailed description of ARARs for the Site can be found in Attachment 3. This listing has been subdivided to show Action-Specific, Location- Specific and Chemical-Specific regulations.

7. Project schedule

The release mitigation and Site investigation/design work described in sections 1a. and 1b. above will be implemented this field season. Currently the Removal program is working with the START and ERRS contractors to develop a more detailed Project Work Plan and Schedule. The long-term source control tasks will not be implemented until a future time; a more detailed schedule of these actions will have to be addressed in the anticipated Action Memorandum Amendment next year.

B. Estimated Costs

Cost Estimate: A table containing cost estimates for the Removal project ceiling for the work anticipated this summer is shown below. Additionally shown is a table containing estimated costs for the investigation/design work; these are considered

CERCLA Section 104(b) costs, and therefore do not track against the Site ceiling for purposes of the $2 million and 12 month limits. They are listed for informational purposes only.

EXTRAMURAL COSTS:

Mitigation Work:

Road Improvement	$	109,000.00
Debris Clean-up	$	21,000.00
Impoundment De-watering	$	174,000.00
Site Re-grading	$	276,000.00
Erosion Control	$	37,000.00
Water Treatment (construction/operation)	$	164,000.00
Stream Protection System	$	168,000.00
Construction Oversight	$	35,000.00
Adit 1 Diversion	$	28,000.00
Power / Phone / Mobilization	$	80,000.00
START Support	$	7,000.00
Subtotal	$	1,099,000.00
20 % Extramural Costs Contingency	$	219,800.00
TOTAL, REMOVAL PROJECT CEILING	**$**	**1,318,800.00**

Investigation/Design Work (Removal Assessment Costs per CERLCA 104(b))

Site Imaging	tbd
Survey Work	tbd
Evaluation of Potential Repository Sites	tbd
Develop Alternatives Analysis	tbd
Evaluation of Mine Workings	tbd
Locate Culvert	tbd
Nature and Extent Sampling	tbd
Subtotal	tbd
20% Removal Assessment Contingency	tbd
TOTAL REMOVAL ASSESSMENT COST	$400,000

VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed or no action will increase public health risks and threats to the environment because the hazardous substances on site pose a health risk to any persons who visit the Site, as well as the wildlife in the area. The features at the Site will also continue to impact the quality of the water supply for the Town of Crested Butte.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

EPA is presently conducting research to identify potentially responsible parties for the Site. A confidential Enforcement Addendum is included with this Action Memorandum as Attachment 4.

No state or local entities have been identified as owners/operators at the Site, but as discussed earlier the USFS owns a substantial portion of the Site. The Remedial Program is actively working with the USFS on a cost share arrangement to fund the cleanup effort, and will be working cooperatively with the State and EPA.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated at:

Total Removal Project Ceiling	$1,318,800.00
EPA's Direct Intramural Costs	$200,000.00
Subtotal	$1,518,800.00
Regional Indirect Cost (35%)*	$531,580.00
ESTIMATED TOTAL EPA COSTS	**$2,050,380.00**

* Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of the removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of total cost estimates nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.

X. RECOMMENDATION

This decision document represents the selected Removal Action for the Standard Mine NPL Site that is part of the Coal Creek watershed, in Gunnison County, Colorado, developed in accordance with CERCLA, as amended, and consistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a Removal, and we recommend your approval of the proposed Removal Action. The total project costs if approved will be $1,390,500.00. This includes the costs for all the actions contemplated in this Action Memorandum. Of the total costs, an estimated $930,000 comes from the Regional removal allowance and constitutes the "Removal Ceiling."

Approve: _____ Date: 6/9/2006
Max H. Dodson
Assistant Regional Administrator
Office of Ecosystems Protection
and Remediation

Disapprove: _____ Date: _____
Max H. Dodson
Assistant Regional Administrator
Office of Ecosystems Protection
and Remediation

XI. RECOMMENDATION FOR FOREST SERVICE

This decision document represents the selected Removal Action for the Standard Mine NPL Site that is part of the Coal Creek watershed, in Gunnison County, Colorado, developed in accordance with CERCLA, as amended, and consistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a Removal, and we recommend your approval of the proposed Removal Action. The total project costs if approved will be $1,390,500.00. This includes the costs for all the actions contemplated in this Action Memorandum. Of the total costs, an estimated $930,000 comes from the Regional removal allowance and constitutes the "Removal Ceiling."

EPA HQW

Approve: _____ Date: 6/6/06
Glenda Wilson
Regional Engineer
United States Forest Service
Rocky Mountain Region

Disapprove: _____ Date: _____
Glenda Wilson
Regional Engineer
United States Forest Service
Rocky Mountain Region

Attachments:

1 - Site Location
2 – Standard Mine (Features)
3 – Applicable or Relevant and Appropriate Requirements (ARARs)

SUPPLEMENTAL DOCUMENTS

Support/reference documents which may be helpful to the reader and/or have been cited in the report may be found in the Administrative Record File at the Superfund Records Center for Region VIII EPA, 999 18th Street, Denver, Colorado 80202.

EPA. NPL Site Narrative for Standard Mine. Retrieved March 24, 2006 from http://www.epa.gov/superfund/sites/npl/nar1740.htm

EPA. Spring 2005 Surface Water Sampling Results. Standard Mine Superfund Site.

EPA. Fall 2005 Surface Water and Sediment Sampling Results. Standard Mine Superfund Site.

Science Applications International Corporation (SAIC). 2002. Final Engineering Evaluation/Cost Analysis Report. July 9, 2002

National Primary Drinking Water Regulations (NPDWRs), 40 C.F.R. § 141 (2004).

Town of Crested Butte Watershed Protection District Ordinance (Article 14-5). http://www.crestedbutte.govoffice2.com/vertical/Sites/{6058FFBB-CB06-4864-B42F-B476F794BE07}/uploads/{7CD6988A-E04B-4634-9679-6C04BFF06871}.PDF

URS Operating Services, Inc. (UOS). 2006. Conceptual Project Plan Standard Mine Site. March 20, 2006.

URS Operating Services, Inc. (UOS). 2000. Expanded Site Inspection Analytical Results Report. June 30, 2000.

URS Operating Services, Inc. (UOS). 1998. Preliminary Assessment for Combined Assessment. Ruby Mining District – South and Ruby Mining District – West. January 1999.

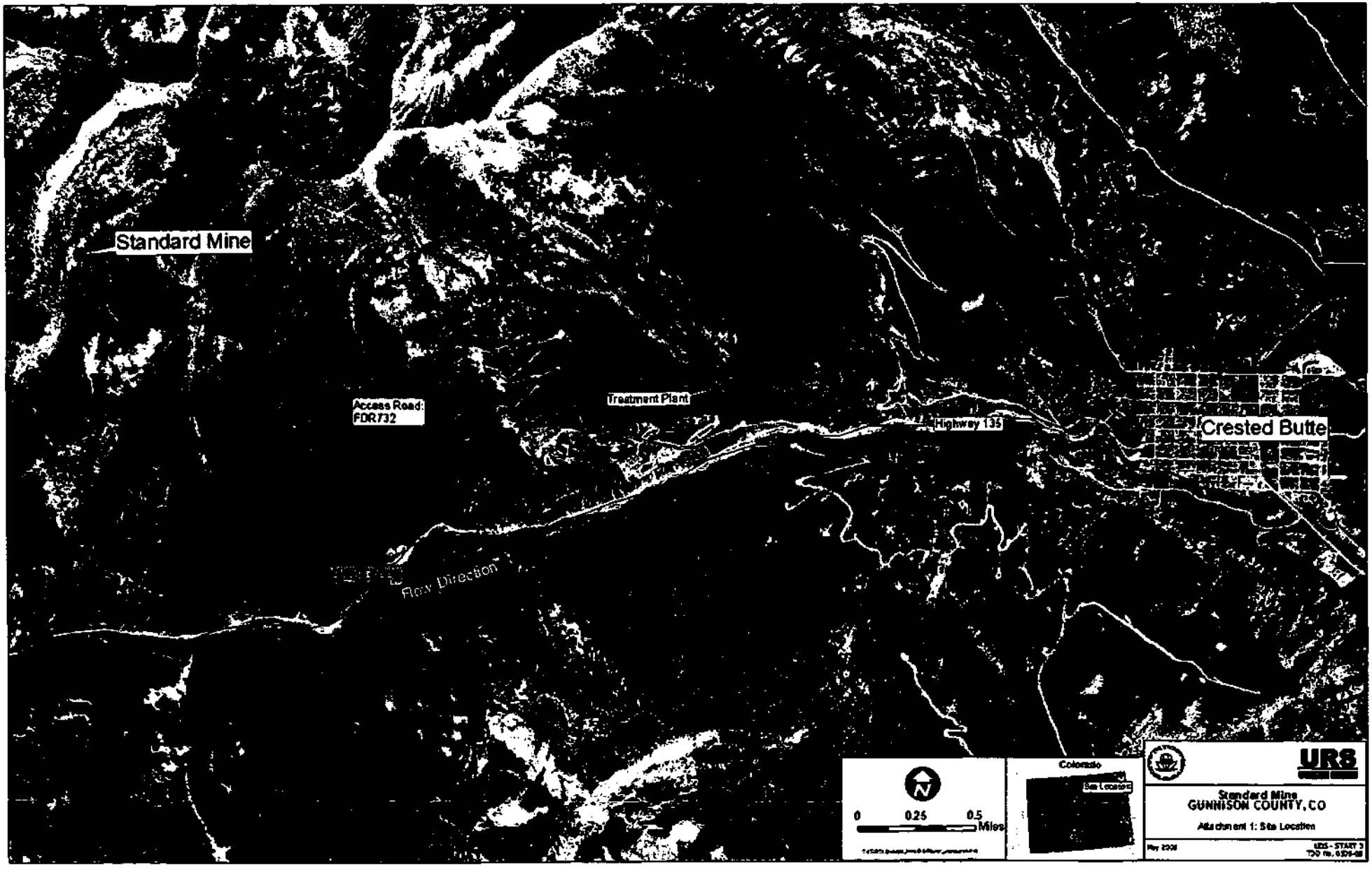
URS Operating Services, Inc. (UOS). 2006. Sampling Activities Report Standard Mine Site. March 20, 2006.

ATTACHMENT 1
Site Map

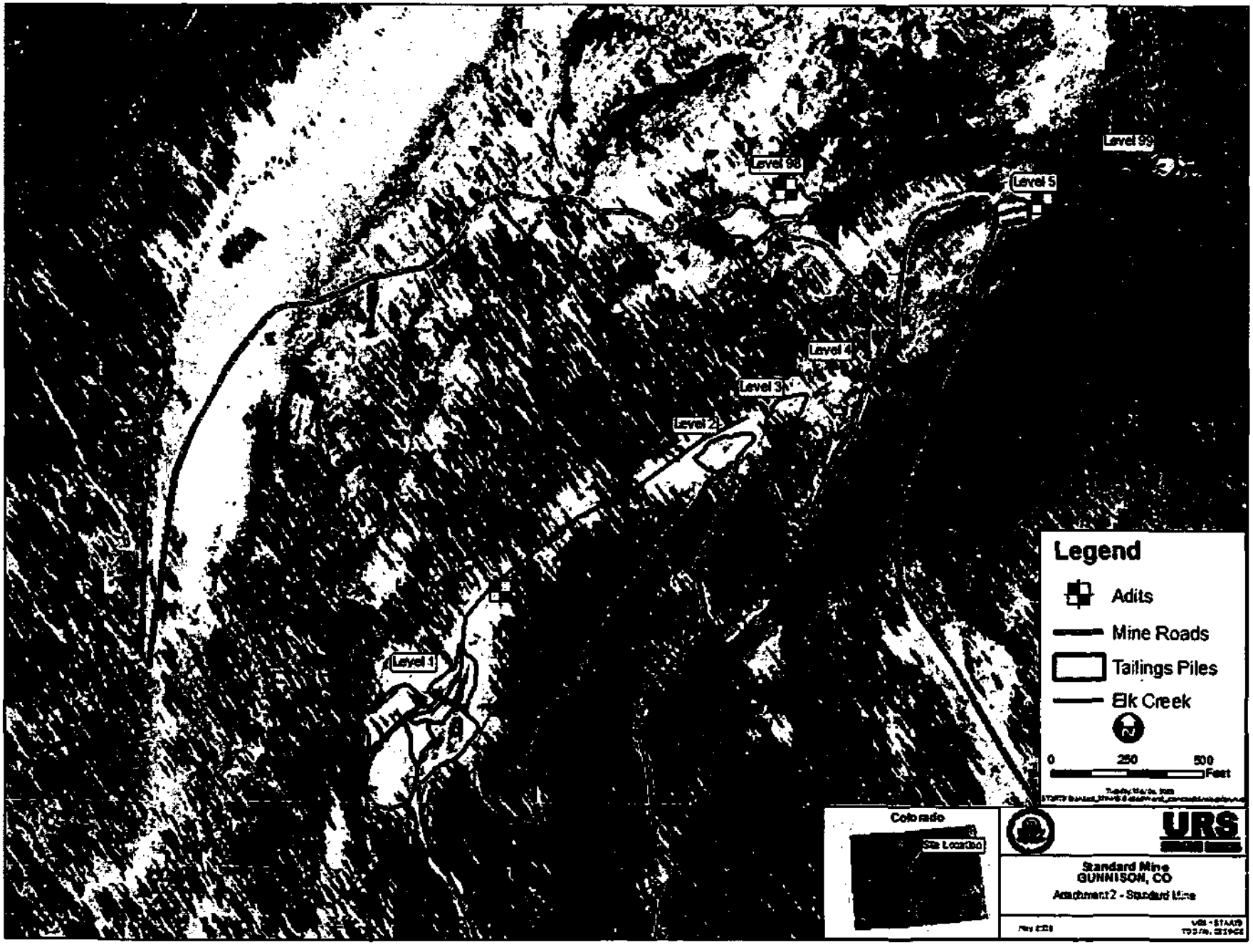
Poor Quality Source Document

The following document images have been scanned from the best available source copy.

To view the actual hard copy, contact the Superfund Records Center at (303) 312-6473.


Standard Mine
Access Road:
FDR732
Treatment Plant
Highway 135
Crested Butte
Flow Direction
N
0
0.25
0.5
Miles
Colorado
Site Location
URS
Standard Mine
GUNNISON COUNTY, CO
Attachment 1: Site Location
May 2008
URS - START 3

ATTACHMENT 2
Standard Mine Features


Level 99
Level 5
Level 4
Level 3
Level 2
Level 1
Legend
Adits
Mine Roads
Tailings Piles
Elk Creek
N
0
250
500
Feet
Colorado
Site Location
URS
Standard Mine
GUNNISON, CO
Attachment 2 - Standard Mine

ATTACHMENT 3
Applicable or Relevant and Applicable Requirements (ARARs)

ACTION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable or Relevant and Appropriate	Comments
FEDERAL				
Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA Subtitle D)	40 CFR Part 257, Subpart A: § 257.3-1 Floodplains, paragraph (a); § 257.3-7 Air, paragraph (b)	Regulates the generation, storage, handling and disposal of solid waste.	On-Site: Applicable or Relevant and Appropriate Offsite: Applicable	Relevant and appropriate to in-place capping. Applicable to on-site consolidation or off-site disposal.
RCRA Subtitle C	40 CFR Part 261.4(b)(7) and RCRA Section 3001(b) (Bevill Amendment)	Regulates the generation, treatment, storage and disposal of hazardous wastes.	Applicable for non-Bevill exempt wastes	Applicable for disposal of listed wastes. Mining wastes are Bevill exempt.
Standards Applicable to Generation of Hazardous Waste	40 CFR Part 262, pursuant to 42 USC § 6922	Establishes standards for the generation of hazardous waste.	See RCRA Subtitle C	
Standards Applicable to Transporters of Hazardous Waste	40 CFR Part 263, pursuant to 42 USC § 6823	Regulates the transportation of hazardous waste.	See RCRA Subtitle C	
Dredge and Fill Requirements	40 CFR 230-233, 320-330, Section 404, pursuant to 33 USC § 1251-1376	Prohibits discharge of dredged of fill material into wetlands or navigable waters of the U.S. without permit.	Applicable	
National Pollutant Discharge Elimination System (NPDES)	40 CFR Parts 122, 125, pursuant to 33 USC § 1342	Regulates the discharge of pollutants to waters of the U.S.	Applicable	Would apply to point source discharges
STATE				
Colorado Solid Waste Disposal Sites and Facilities Act	6 CCR 1007-2, pursuant to CRS § 30-20-101, et.seq.	Establishes standards for the licensing, locating, constructing, and operating solid waste facilities.	On-Site: Applicable or Relevant and Appropriate Offsite: Applicable	Relevant and appropriate to in-place capping. Applicable to on-site consolidation or off-site disposal. No licensing or permitting is required.
Colorado Hazardous Waste Act	25-15-301 to 327 C.R.S. and 6 CCR 1007-3	Regulates generation, storage and disposal of hazardous waste, and the siting, construction, operation, and maintenance of hazardous waste disposal facilities.	Applicable or relevant and appropriate	Applicable for disposal of listed wastes and for off-site disposal of hazardous wastes generated. Relevant and appropriate for Bevill exempt wastes. Mining waste is Bevill exempt.

ACTION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable or Relevant and Appropriate	Comments
FEDERAL				
Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA Subtitle D)	40 CFR Part 257, Subpart A: § 257.3-1 Floodplains, paragraph (a); § 257.3-7 Air, paragraph (b)	Regulates the generation, storage, handling and disposal of solid waste.	On-Site: Applicable or Relevant and Appropriate Offsite: Applicable	Relevant and appropriate to in-place capping. Applicable to on-site consolidation or off-site disposal.
RCRA Subtitle C	40 CFR Part 261.4(b)(7) and RCRA Section 3001(b) (Bevill Amendment)	Regulates the generation, treatment, storage and disposal of hazardous wastes.	Applicable for non-Bevill exempt wastes	Applicable for disposal of listed wastes. Mining wastes are Bevill exempt.
Standards Applicable to Generation of Hazardous Waste	40 CFR Part 262, pursuant to 42 USC § 6922	Establishes standards for the generation of hazardous waste.	See RCRA Subtitle C	
Standards Applicable to Transporters of Hazardous Waste	40 CFR Part 263, pursuant to 42 USC § 6823	Regulates the transportation of hazardous waste.	See RCRA Subtitle C	
Dredge and Fill Requirements	40 CFR 230-233, 320-330, Section 404, pursuant to 33 USC § 1251-1376	Prohibits discharge of dredged of fill material into wetlands or navigable waters of the U.S. without permit.	Applicable	
National Pollutant Discharge Elimination System (NPDES)	40 CFR Parts 122, 125, pursuant to 33 USC § 1342	Regulates the discharge of pollutants to waters of the U.S.	Applicable	Would apply to point source discharges
STATE				
Colorado Solid Waste Disposal Sites and Facilities Act	6 CCR 1007-2, pursuant to CRS § 30-20-101, et.seq.	Establishes standards for the licensing, locating, constructing, and operating solid waste facilities.	On-Site: Applicable or Relevant and Appropriate Offsite: Applicable	Relevant and appropriate to in-place capping. Applicable to on-site consolidation or off-site disposal. No licensing or permitting is required.
Colorado Hazardous Waste Act	25-15-301 to 327 C.R.S. and 6 CCR 1007-3	Regulates generation, storage and disposal of hazardous waste, and the siting, construction, operation, and maintenance of hazardous waste disposal facilities.	Applicable or relevant and appropriate	Applicable for disposal of listed wastes and for off-site disposal of hazardous wastes generated. Relevant and appropriate for Bevill exempt wastes. Mining waste is Bevill exempt.

LOCATION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable or Relevant and Appropriate	Comments
FEDERAL				
Executive Order No. 11990 Protection of Wetlands	40 CFR § 6.302(a) and Appendix A	Minimizes impacts to wetlands.	Applicable	Applicable if wetlands are impacted by response actions
STATE				
Historic Places Register	CRS §§ 24-80.1-101 to 108	The State historic preservation officer reviews potential impacts to historic places and structures.	Applicable	Applicable if historic places and structures are impacted by response actions.
Colorado Natural Areas	Colorado Revised Statutes, Title 33 Article 33, Section 104	Maintains a list of plant species of "special concern." Recommends coordination among Division of Parks and Outdoor Recreation.	Applicable	Only if appropriate plant species are present

CHEMICAL-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable or Relevant and Appropriate	Comments
STATE				
Colorado Classification and Numeric Standards for Segment 11 of Coal Creek, Upper Gunnison River Basin: WQCD Reg. No. 35	5 CCR 1002-35	Classification and numeric standards for the Upper Gunnison River/Lower Dolores River Basins, including tributaries and standing bodies of water. Classification identifies actual beneficial uses of water and allowable concentrations of various parameters.	Applicable	