

**United States Department of the Interior
Bureau of Land Management**

**Environmental Assessment DOI-BLM-CA-D050-2013-075
February 2014**

**Remediation of Abandoned Mine Land Physical Safety Hazards and Solid
Waste Removal at the Gum Tree and Whitmore Mine Sites**

Location: Township 12 North, Range 12 West, Section 32 Mojave, Kern County

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1.0 PURPOSE & NEED

1.1 Introduction:

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Remediation of Abandoned Mine Land Physical Safety Hazards and Solid Waste Removal at the Gum Tree and Whitmore Mine Sites. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in California Desert Conservation Plan (CDCA) of 1980, as amended and the West Mojave Plan Amendment of 2006.

1.2 Background:

Gum Tree Mine

The Gum Tree Mine is located in the eastern ½ of Section 32 on the southern slope of Standard Hill, and adjoining the Standard Group (Troxel and Morton, 1962). Specifically, the project area is within the Gum Tree No. 1 claim, which was also known in the past as the Victory Claim. The Victory claim and the neighboring Liberty claim appear to have been part of the Yellow Dog Extension mine in 1923 (Tucker, 1923). The two claims were purchased by Jess Knight in early 1936 (Kegley, 1936). Knight also owned a number of prosperous claims on Soledad Mountain, including the Elephant-Eagle group of claims (Miller and Miller, 1976). The Victory and Liberty claims were said to have been formerly owned by Pat Wolfe, with two shafts sunk on the property and shipments of ore made to the Burton Mill at Tropic. An August 10, 1936 Los Angeles Times article notes that the claims, which adjoined the Standard Group, were undergoing renovation to their compressors, hoisting equipment, and shaft, “under the direction of” Harvey Hammond (LAT, August 10, 1936). On a 1993 BLM mining claims map, the Victory and Liberty claims are named the Gum Tree No. 1 and Gum Tree no. 2, respectively.

Little information could be found concerning the Gum Tree Mine after 1941; it is likely that like other gold mines in the region, the Gum Tree stopped production during World War II. The 1949 California Journal of Mining and Engineering indicates that the Gum Tree Mine was idle at that time (Tucker et al, 1949). However, a 1948 article in the Bakersfield Californian includes the Gum Tree Mine in a list of Mojave-area gold mines that were currently either producing or exploring and blocking out ore (January 2, 1948).

Total recorded production of the Gum Tree Mine (as of 1962) was over 200 tons, averaging 0.2oz. of gold and 1.7 oz. of silver (Troxel and Morton, 1962).

Whitmore Mine

The Whitmore Mine, located in the west ½ of Section 32, began operation in 1912 under the St. Mary Mining Company. At some point prior to 1923 it was acquired by W. K. and J. E. Whitmore of Mojave, who operated the mine until 1936. The ore within the Whitmore Mine is located in two parallel veins of quartz, with intervening weaker veins, which strike north 30 degrees west, and dip from 60 to 80 degrees northeast (Troxel and Morton, 1962).

The mine was idle from 1942 to 1948 (Tucker et al., 1949). However, based on occasional mentions in local newspapers, work appears to have occurred sporadically between World War II and the turn of the 21st century. BLM mining claim records dating from 1993 to 2010 indicate that the Whitmore Mine claims Whitmore No. 1, No. 2, No. 3, No. 4, No. 6, and Whitmore Mill Site No. 1 have been worked until very recently. These claims were operated by Joe L. Pauley, who worked the underground portion of the workings. In 2001, Glenn Mullins and Vince Sanders submitted a plan to rework the existing tailings piles, but planned no underground work. Mullins and Sanders installed barbed wire and chain link fencing, metal posts, and occasionally employed wood to cover shaft openings on the claims. It is unknown when their operation ceased.

The Whitmore Mine's most productive periods were 1936 to 1942, when it produced 4,500 tons of ore at a value of \$100,000, and 1948 to 1952, when it produced 2,300 tons of ore (Shumway et al, 1980; Troxel and Morton, 1962). Total production for the gold and silver mine exceeded 7,500 tons of ore (Troxel and Morton, 1962).

1.3 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is for the BLM to: 1) clean-up abandoned solid waste, trash, and isolated instances of dry chemicals once used in the processing of removing minerals from milled ore rock, and; 2) remediate abandoned mine land (AML) features that pose a threat to human health and safety.

The need for the Proposed Action is for the BLM to meet its obligations under FLPMA, the CDCA Plan of 1980, and other federal laws and policies to comply with reclamation and remediation of Abandoned Mine Lands (AML) such as the AML's national policy to address solutions to human health and safety issues.

1.4 Conformance with BLM Land Use Plan(s):

In accordance with BLM planning regulations (43 CFR 1610.5-3), the proposed actions in this EA were evaluated for compliance with existing land use and resource management plans (RMP) for relevant portions of the project area. While all existing land use plans and RMPs in the California Desert District require that the BLM manage public lands to prevent undue or unnecessary degradation to public lands and resources, none of these plans specifically address AML features as an issue affecting public land management. This EA incorporates, by reference, the following RMPs and land use management plans: CDCA Plan of 1980, as amended by the West Mojave Plan Amendment.

1.5 Relationship to Statutes, Regulations, or other Plans:

1.3.1 Federal Land Policy and Management Act (FLPMA) guides the BLM in administering federal lands under its jurisdiction. Under FLPMA (Title VI 43 USC 1781 Sec. 601 (a)) The Congress finds that:

- (1) The California Desert contains historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources that are uniquely located adjacent to an area of large population;
- (2) The California Desert environment is a total ecosystem that is extremely fragile, easily scarred, and slowly healed;
- (3) The California Desert environment and its resources, including certain rare and endangered species of wildlife, plants, and fishes, and numerous archeological and historic sites, are seriously threatened by air pollution, inadequate Federal management authority, and pressures of increased use, particularly recreational use, which are certain to intensify because of the rapidly growing population of southern California;
- (4) The use of all California Desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road vehicles;
- (5) The Secretary of the Interior (Secretary) has initiated a comprehensive planning process and established an interim management program for the public lands in the California Desert; and
- (6) To insure further study of the relationship of man and the California Desert environment, preserve the unique and irreplaceable resources, including archeological values, and conserve the use of the economic resources of the California Desert, the public must be provided an opportunity to participate in such planning and management, and additional management authority must be provided to the Secretary to facilitate effective implementation of such planning and management.

The Whitmore/Gum Tree project is located entirely within the Mojave Desert Air Basin (MDAB), which encompasses over 20,000 square miles of California's desert. The MDAB consists of the eastern half of Kern County, the northern desert portion of Los Angeles County, most of San Bernardino County, and eastern Riverside County. The eastern portion of Kern County where the AEWP is located is regulated by the Eastern Kern Air Pollution Control District (EKAPCD). They have issued a set of rules to implement the State Implementation Plan (SIP) and control fugitive dust emissions.

The primary air pollutant present in the District is particulate matter (PM). The vast majority of efforts go toward controlling this pollutant. Two types of PM are regulated, PM-10 and PM-2.5. The difference is in the size of the particles – PM-10 is particulate matter with an average maximum size of 10 microns and PM-2.5 is 2.5 microns or smaller.

Federal Conformity

The proposed project is located in a federal nonattainment area and requires the approval of a federal agency (BLM). Therefore, this project is subject to the general conformity regulations (40 CFR Part 93). The Mojave Desert air basin area containing the project locations is classified as Former Subpart 1 nonattainment of the federal ozone ambient air quality standard. The general conformity emissions applicability threshold for this nonattainment classification is 100 tons/year of ozone precursor emissions (NO_x and VOCs).

The USEPA has set emission standards for non-road diesel engines, including those used on construction cranes. These standards are published in the U.S. Code of Federal Regulations, Title 40, Part 89 [40 CFR Part 89].

Additionally, the project must comply with the BLM's California Desert Conservation Area (CDCA) Plan. The CDCA Plan does not have any specific air quality emission reduction measure requirements but does require

that these "...areas will be managed to protect their air quality and visibility in accordance with Class II objectives of Part C of the Clean Air Act Amendments unless otherwise designated another class by the State of California as a result of recommendations developed by any BLM air-quality management plan."

Projects within federal air quality nonattainment areas have an additional burden in that a Federal agency must make a determination that its actions conform to the State Implementation Plans (SIP) before the action is taken (Section 176 (c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq) and regulations under 40 CFR part 93 subpart W). These authorities address the conformity of general federal actions to SIPs. These authorities state, "No department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan". They further state that a Federal agency must make a determination that Federal actions conform to the applicable implementation plan before the action is taken.

EKAPCD Fugitive Dust and Point Source Emissions Regulations

Rule 401.

Rule 401 states that a person shall not discharge into the atmosphere, from any single source of emissions whatsoever, any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines, or

Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A [of the Rules].

Rule 404.1.

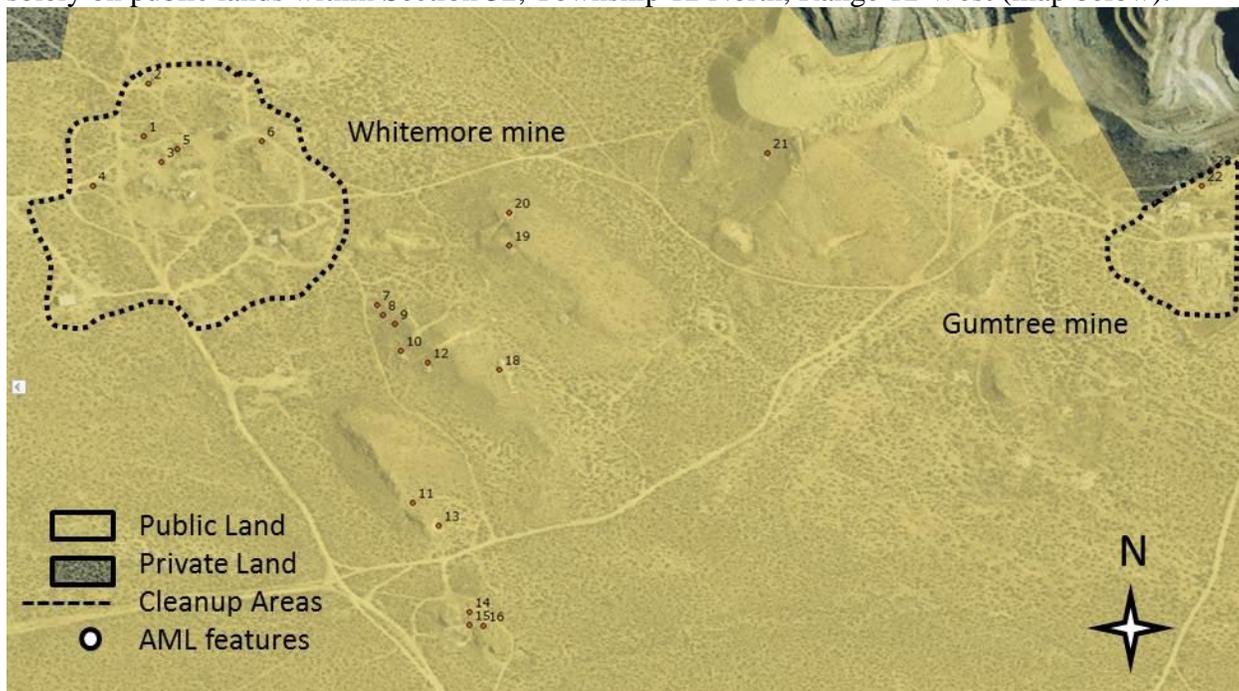
Rule 404.1 applies to any people who discharge particulate matter emissions into the atmosphere from any single source operation and states:

- Particulate matter emissions shall not exceed 0.1 grain per standard cubic foot of gas at standard conditions (gr/scf).

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Alternative A – Proposed Action:

The proposed action is for the BLM to begin a multi-year clean-up of two abandoned mine land sites located solely on public lands within Section 32, Township 12 North, Range 12 West (map below).



These actions include the following:

Solid Waste and Hazardous Materials Removal

It is the BLM's intent to hire a licensed and certified contractor to remove and dispose of all hazardous materials (petroleum products, borax or other dry chemicals used in mining) and structural debris within the project area. Approximately 23 areas of debris and hazardous material have been identified. Metal, glass, and non-hazardous materials will be placed in industrial waste containers and properly disposed of at a regional disposal facility while all other construction materials will be piled and burned. Burn piles will be placed on existing concrete slabs (Picture 1) to prevent soil sterilization.

The prescribed burn would only be implemented with an approved burn permit from Kern County. Close monitoring of weather, wind direction, and regional fire danger conditions would begin 1-2 weeks prior to proposed burn dates and continue until after the burn. This monitoring would provide input to support the go/no-go decision as to whether the air-shed is in prescription to address fire effects (smoke impacts and safety concerns) and to meet the overall goal of the project proposal.

All preparation work would be done by BLM or a contractor. A BLM burn boss (overall supervisor of prescribed burn implementation) would be appointed by BLM. The burn boss would be responsible for timing, execution, and release of the burn. The prescribed burn represents a low risk for escape, due to ignition

methods, lack of continuous vegetation, and resources available to prevent or contain an escaped fire. After the burn has been completed all ash piles will be filtered for unburned debris, ie., nails. The unburned debris will be removed and disposed of at a regional disposal facility.

Remediation of AML features – adits, shafts, trenches

The BLM initiated a step-by-step, comprehensive assessment in the fall of 2012 to determine dangers to public health and safety associated with AML features located on land managed by the BLM within Section 32 as well as the biological and cultural importance of these mine features. The steps taken to gather this information include:

1. Establish an Interdisciplinary Evaluation Team for the project
2. Determine the Site Accessibility
3. Conduct the Site Assessment
4. Perform Cultural and Biological Resource Inventories
5. Develop the Remediation Plan

The BLM has determined that 29 abandoned mine land features in Section 32 (see Table 1 in Appendix 1) pose a threat to public health and safety. The BLM plans to start the action of remediating these abandoned mine features in 2014. Work will entail the utilization of an all-wheel drive backhoe to perform backfill operations; the use of light duty pickup trucks with utility trailers to mobilize equipment and supplies necessary to construct physical remedies to limit and control access of selected abandoned mines. Closure remedies are constructed of vandal-resistant materials, such as heavy gauge angle iron steel, reinforced concrete, or heavy gauge expanded steel.

Construction of steel structures typically requires welding.

Welding can be done on-site using gasoline or diesel powered electric welding equipment that requires vehicle access. Cutting and welding would be conducted in areas that have been made fire safe by removing vegetation or protecting vegetation from ignition sources by wetting the worksite and the downwind area with water prior to welding. Before cutting or welding operations begin, a person would be designated as the “fire watch.” During welding operation, the fire watch would be responsible for re-wetting vegetation surrounding the work site for ongoing fire prevention.

2.2 Alternative B – No Burn Alternative:

This alternative incorporates all the same activities from the Proposed Action except for burning. Materials used for construction would not be burned in the project area. Materials would be properly transported and disposed of at a waste treatment facility.

2.3 Alternative C – No Action Alternative:

The no action alternative would result in the BLM not cleaning up Section 32. This alternative would affect public safety due to the solid waste, hazardous materials onsite, and physical safety hazards associated with legacy mining.

3.0 AFFECTED ENVIRONMENT

This section presents relevant resource components of the existing environment which constitute baseline information. Environmental resources in the project area are described in the California Desert Conservation Area Plan EIS (1980) that is incorporated herein by reference.

The BLM has considered the following critical environmental elements and finds that they are not affected by the project, and are therefore excluded from this analysis: (1) Areas of Critical Environmental Concern (ACECs), (2) Environmental Justice, (3) Farmlands, Prime/Unique, (4) Floodplains, (5) Forestry, (6) Fire Management, (7) Geothermal, (8) Minerals, (9) Native American values, (10) Paleontology, (11) Range/Livestock, (12) Socioeconomics, (13) Visual Resources, (14) Wetlands and Riparian, (15) Wild Horse & Burro, (16) Wild and Scenic Rivers, (17) Wilderness, (18) Invasive species, and (19) Recreation.

The critical elements of the environment that were identified by BLM specialists as likely to be impacted by the proposed action or alternatives are: 3.1 Air Quality, 3.2 Soils, 3.3 Cultural Resources, 3.4 Vegetation, 3.5 Wildlife, and 3.6 Threatened and Endangered Species.

3.1 Air Quality:

The project area is within the Mojave Desert air basin (MDAB). The project area falls within the Mojave Desert Air Quality Management District. The Mojave Desert Air Quality Management District has air quality jurisdiction over the San Bernardino County portions of the project area.

Air quality throughout the project area is generally good. There are, however, times that the area has not met air quality standards due to locally generated and/or transported in pollutants. Currently the project area is classified as nonattainment areas for ozone and PM10 under state standards and either unclassified, maintenance or nonattainment for PM10 under national ambient air quality standards. Implementation plans have been prepared for all of the maintenance/nonattainment areas. The plans identify sources of PM10 emissions and control measures to reduce emissions. Ozone pollutants occur in the area primarily from transport in from the South Coast Air Basin and the San Joaquin Valley Air Basin.

Air pollutants occur as gaseous and particulate matter that is emitted into the air. Air pollutants are very fleeting in the desert due to the constant air movement. Moving air constantly disperses air pollutants from their source and dilutes them. In addition, the interaction between pollutants, effects of moisture and sunshine generally modify most pollutants over time. Some form particulates and fall as dry deposition others fall with the rain. The air pollutants don't remain in the area of the source and accumulate over time.

Visibility is generally referred to as the relative ease with which objects can be seen through the atmosphere under various conditions. Particulate matter and gases introduced into the atmosphere either absorbs or scatter the light, reducing the amount of light a person can receive from a viewed object. Visibility is impaired by dust (especially fine particulates such as PM10) and sulfates. Impact to visibility from pollutants transported from the major urban centers takes the form of widespread regional haze which frequently impairs visibility. The NEMO planning area is currently unclassified for visibility reducing particles (VRP) under both national and state ambient air standards. Particles between 0.1 and 1.5 microns diameter are the most effective in reducing visibility. This range of particle sizes is a subset of the fine PM10 particles. Soot particles in particular are effective in reducing visibility. Small nitrate and sulfate particles may also substantially reduce visibility. Nitrogen dioxide and water droplets can reduce visibility. Many of the VRP form in the atmosphere downwind from sources of emissions.

3.2 Soils:

Two major processes shape the desert landscape: 1) erosion by wind and water and 2) deposition of aeolian (windblown) or fluvial (waterborne) sediments. Erosion is a natural and important process in the desert. Due to the lack of vegetation in desert systems, erosion is a major cause of changes in land forms.

Erosion also affects biostatic processes, such as nutrient cycling and biogeochemical cycling in soil and water. Factors affecting temporal and spatial variation in erosion are rainfall, vegetation, soils, and slope. Erosion by water results in high sediment loads in desert streams. Sediment is derived from direct contributions from slopes and materials from the bed and banks. Large streams tend to carry more of the slope materials, small streams more bed and bank material. Sediments are largely sand and gravel with little silt, clay, or large debris. Soils in the area are shallow and rocky and susceptible to accelerated erosion from wind and water especially when the surface crusts have been disturbed.

Soils located within abandoned mine land footprints are characterized as disturbed soils. Any soil in these areas is typically a mix of broken rock, excavated soil, and or other mining debris (such as brick, concrete, wood, and steel). The routes used to access abandoned mine locations are also characterized by disturbed soils. The BLM has observed, in general, that the Gum Tree and Whitmore mine sites are sparsely vegetated.

Soils in the Mojave Desert include aridisols and entisols in combination with thermic and hyperthermic soil temperature regimes and aridic soil moisture regime on foothills and valleys. Some low-lying areas in the valleys have salt-affected soils. Aridisols and entisols in combination with mesic and frigid soil temperature regimes, and aridic and xeric soil moisture regimes occur in the mountains.

3.3 Cultural Resources:

The BLM Ridgecrest Field Office contracted with Environmental Science Associates (ESA) to conduct a Class III cultural resource inventory of the Area of Potential Effect (APE) for the proposed action (Bray, et al 2012; BLM Project CA-650-12-52). The inventory was conducted in July 2012, and included an archival records review, a Native American Heritage Commission (NAHC) Sacred Lands File check, and a pedestrian cultural resources survey of approximately 122 acres. The boundaries of the APE were determined by the BLM based on the selected mining claim blocks where physical safety hazards were previously identified and where mining claims were no longer active. The project area included two parcels: the 109 –acre westernmost parcel containing the Whitmore Mine, and the 13-acre easternmost parcel containing the Gum Tree Mine,. As a result of the inventory, a total of 183 features was recorded, 157 associated with the Whitmore Mine (P-15-016228/CA-KER-8970/H) and 26 associated with the Gum Tree Mine (P-15-016227/CA-KER-8969H).

Of the 167 features associated with the Whitmore Mine, 147 are historic mining-related features, nine are prehistoric features, and one feature is of an undetermined date. The historic mining features consist of 55 prospect pits or trenches, 30 shafts, 17 mining claims, 12 historic refuse scatters, seven foundations, four standing structures, two collapsed structures without foundations, one adit, and 29 other mining features. The nine prehistoric features consist of clusters of fire-affected rock, interpreted as deflated thermal features. Of the 26 features associated with the Gum Tree Mine, all of which are historic in date, there are eight foundations, three refuse scatters, three shafts, three standing structures, one mining claim, one prospect pit and mining claim, and seven other mining features. All of the features described were recorded on two sets of California Department of Parks and Recreations (DPR) 523 forms, one for the Whitmore Mine and one for the Gum Tree Mine.

The Whitmore Mine and Gum Tree Mine were formally evaluated for their eligibility for listing in the National Register of Historic Places. The Whitmore Mine and the Gum Tree Mine are not eligible for listing as individual resources. Although not formally evaluated for National Register eligibility as part of this study, cursory research related to the Mojave Mining District suggests that it may be eligible for listing in the National Register as a historic district under Criterion A, for its significant association with Kern County gold mining, and Criterion C, for representing a significant and distinguishable entity whose components may lack individual distinction. The significance of the Mojave Mining District may be derived from its contribution to mining on a local level, and would likely be related to the district's association with Kern County mining and its substantial contribution to the output of gold and silver in Kern County between the periods of 1894-1914 and 1932-1942.

Although not recommended individually eligible, the Whitmore Mine and Gum Tree Mine may be contributing elements to a historic district associated with the Mojave Mining District under Criteria A and C, although such a historic district has not been identified or evaluated for the National Register at this time. The Whitmore Mine and Gum Tree Mine may be contributing elements to such a district for their contribution to, and association with, the success of the Mojave Mining District as one of the largest producers of ore in Kern County and the California Desert during the period between 1932 and 1942. Although relatively small producers in the scheme of the larger Mojave Mining District, Whitmore Mine and Gum Tree Mine nevertheless contributed to the overall success of the district.

The Whitmore Mine and Gum Tree Mine, combined, contain a total of 183 documented discrete mining-related features. Of these features, 157 are associated with the Whitmore Mine, and 26 are associated with the Gum Tree Mine. Of these features, a total of 16 features within the Whitmore Mine and 10 features within the Gum Tree Mine have been identified that best convey the historical significance of the two mines as potential contributors to the Mojave Mining District. Should the resources eventually be determined to be contributing elements to a possible historic district associated with the Mojave Mining District, these features may be considered primary character-defining features. These features appear to date to the latter of the two possible periods of significance postulated here for the Mojave Mining District, 1932-1942, retain integrity, are the best examples of their type, and most clearly convey the significant values of the Whitmore Mine and Gum Tree Mine. Table 1 in Appendix 1 documents those features which may be considered primary character-defining features of each resource.

The nine prehistoric features and one feature of unknown age located within the Whitmore Mine are recommended individually eligible for the National Register under Criterion D based on their potential to yield important information about prehistory. These features appear to retain integrity, with limited disturbances noted; have the potential to contain subsurface archaeological components; and have the potential to contain organic material that may provide radiocarbon dating opportunities. Several features also contained prehistoric lithic or groundstone artifacts. The features may contain data that could yield important information to address local and regional research topics concerning prehistoric settlement and subsistence, mobility, resource procurement, and lithic technology.

Tribal consultation and coordination for this project was initiated in July 2012 with Federally and non-federally recognized tribes. The Tejon Tribe has requested to be notified in the event of inadvertent discovery. No further comments have been received; however, tribal consultation will be on-going through the course of this project.

3.4 Vegetation:

The project area is located at the western edge of the Desert Floristic Province as described in the Jepson Manual, Higher Plants of California. It is adjacent to the California Floristic Province and the Great Basin Floristic Province. This has resulted in components from all these provinces occurring in the area. Sawyer and Keeler-Wolf in A Manual of California Vegetation describe the vegetation as alliances (communities) dominated by shrubs. The creosote bush (*Larrea tridentata*) alliance is the most common vegetation in the study area. In addition to the Creosote bush, this alliance contains burro-bush or bursage (*Ambrosia dumosa*) and number of other common species. The Joshua tree (*Yucca brevifolia*) alliance is also found in the study area. This alliance is similar to the Creosote Series with the inclusion of emergent Joshua trees. The vegetation along the wash includes the mixed saltbrush alliance. The primary plant species in this alliance is allscale (*Atriplex polycarpa*). The vegetation on the sites are typical for the area and do not contain any specialized endemic plants or habitats. No known Special Status Plants occur on the project sites.

3.5 Wildlife:

The BLM's Wildlife Management Program focuses on the habitat needs and conditions required to sustain healthy populations of native wildlife. Priority is given to special status species, species of concern, and locally important species. Virtually any abandoned mine could be used as roosting or nesting habitat for bats and birds. However, where the ribs, back, and sill of shallow adits are visible from the portal and no lateral workings and sign of bat use is seen, it is safe to assume that the site has low potential as bat habitat.

Bat species found in abandoned mines in the CDD include the Pallid bat (*Antrozous pallidus*), Townsends Big-eared bat (*Corynorhinus townsendii*), Small-footed Myotis (*Myotis ciliolabrum*), Fringed Myotis (*Myotis thysanodes*), Cave Myotis (*Myotis velifer*), Long-legged (*Myotis Myotis volans*), and Yuma Myotis (*Myotis yumanensis*). All of these bat species have legal status as CA BLM Sensitive Species and California State Species of Special Concern. The CDD inventories, monitors, and manages for all of these species. Other bat species that use mines are the big brown bat (*Eptesicus fuscus*), western parastrelle (*Parastrellus hesperus*), California myotis (*Myotis californicus*), and the Mexican free-tailed bat (*Tadarida brasiliensis*). Wood rats, (*Netoma lepida*), deer mice (*Peromyscus maniculatus*) and ringtails (*Bassariscus astutus*) are known to inhabit abandoned mines. No ringtail evidence was found in any of the mines.

Other Federal or State rare, sensitive, or threatened and endangered species including burrowing owl (*Athene cunicularia*), and Mohave ground squirrel (*Spermophilus mohavensis*) are also known to exist in the area.

3.6 Threatened and Endangered Species:

A total of 12 species of vascular plants have been identified as threatened or endangered in the CDD. Two more have been designated by the State of California as endangered or rare (Table 3 of the CDCA Plan). Many other species are local endemics (unique to a specific location or habitat), have limited distributions, or are restricted to specific soil types and are considered rare and endangered by the California Native Plant Society (CNPS 2001).

The CDD supports over 635 species of vertebrates and thousands of invertebrate organisms in a diversity of wildlife habitats. Specific management is required to protect unique and sensitive habitats; sensitive, rare, threatened, and endangered species; and representatives of more common desert habitats and ecosystems and the fish and wildlife resources they support.

The desert tortoise (*Gopherus agassizii*) has a potential to exist within the vicinity of the project area. The desert tortoise is both federally and state-listed as threatened. In 1989, the USFWS gave temporary emergency protection to the desert tortoise in the Mojave region. Long-term protection replaced the temporary measure when the Mojave population was listed as threatened under the ESA. The AML sites scheduled for remediation and closure are located within the designated evolutionarily significant units, distinguished within the Desert Tortoise (Mojave Population) Recovery Plan 1994 (USFWS 1994).

The desert tortoise habitat range includes the Mojave and Sonoran deserts in southwestern Utah, southern Nevada, southeastern California, and western Arizona. To survive the harshness of the desert, the desert tortoise spends up to 95 percent of its life underground, within shallow burrows or caves. Since desert tortoises spend much of their lives in shallow burrows and feed on native plants, they are most vulnerable to any activity that may change their habitat. They tend to have a variety of habitats from sandy flats to rocky foothills, including alluvial fans, washes and canyons where suitable soils for den construction can be found. Desert tortoises have also been found in horizontal AML features. The Desert Tortoise Recovery Plan created recovery units within the six million acres of land where tortoises live. Each unit was then analyzed to address the threats to the species in that area, taking into consideration the multiple uses of the land such as grazing, mining, OHV use, and development.

4.0 ENVIRONMENTAL IMPACTS

The following discussion explains the impacts that would occur for each resource, and then describes the required mitigation. Mitigation can come from the applicant's proposal, existing statute or regulation, or stipulations imposed by BLM as a condition of the issuance of the lease. To the extent that mitigation would arise from a permit stipulation, BLM would include that stipulation in any permit it may issue for the described Project. Impacts include all direct, indirect, and cumulative impacts.

4.1 Air Quality

4.1.1 Alternative A - Proposed Action

Direct Impacts:

Under the proposed action, potential impacts, including fugitive dust (PM10) and ozone emissions would be expected, but would be minor and temporary. Mitigation procedures such as speed limits and guidelines for minimizing dust and vehicle emissions are outlined. Vehicle use on the access road will generate PM10 emissions throughout the project. The backfilling operation will generate PM10 emissions as the heavy equipment places native material into the AML feature. The project as proposed does not exceed the de minimus emission levels and conforms to the SIP and no further conformity analysis or determination is necessary.

Indirect Impacts:

No significant offsite impacts are anticipated. No long term residual adverse effects on Air resources are expected from the proposed action. The impacts are expected to occur during the duration of the proposed action. Once the action is completed the site should return to pre-disturbance stability.

Cumulative Impacts:

The cumulative effect area for air resources for the proposed action is the Mojave Desert Air Basin. The expected emission levels are within the levels in the attainment demonstrations in the SIPs and the cumulative NAAQS eight hour ozone emission standards and are not likely to result in or contribute to emissions exceeding the National Ambient Air Quality Standards.

Mitigation:

1. Use water as necessary to limit fugitive dust and ash blowing off the site during the activity if fugitive emissions exceed State and/or County APCD standards.
2. Limit vehicle speeds to 25 MPH on unpaved roads.
3. Curtail activities when wind speeds exceed 25 MPH.

4.1.2 Alternative B

Direct Impacts:

Activities and impacts associated with project closure would be similar to those discussed in the previous section with the exception of burning debris and smoke emission.

Indirect Impacts:

The indirect outlined above would apply during all stages of project activities.

Mitigation:

The mitigation measures outlined above would apply during all stages of project activities

4.1.3 Alternative C

Under the no action alternative, impacts to air quality would occur at a rate slower than the proposed action as AML projects would continue to be addressed under the current process of conducting site specific environmental assessments.

4.2 Soil

4.2.1 Alternative A - Proposed Action

Direct Impacts:

Direct impacts to soils would occur to soils through vertical and horizontal displacement and mixing as a result of the waste removal and AML construction activities. Additional direct impacts would include compaction and a reduction in pore space and infiltration rates. These direct impacts would occur on currently undisturbed area but may also include additional similar impacts to the currently impacted areas. Burn piles would be placed directly on top of existing concrete foundations in the project area to prevent soil sterilization.

Indirect Impacts:

Indirect impacts would occur as increase soil erosion from water and wind. The movement of soils by water during high flow events would occur both on the intense use areas and down associated drainages. The movement would involve both removal and deposition. The deposition could occur on the sites, adjacent to the site, along or in roads and throughout the drainage. As most of the intense use sites are on shallow slopes, the increased water erosion is expected to be negligible and very localized. Wind erosion could occur on disturbed sites during the common high wind events in the spring. Wind erosion would result in losses of small particles from the surface and increased particulate emissions. The wind erosion losses diminish over time as the small particles are lost from the surface. Erosion rates would only slightly exceed natural rates.

Cumulative Impacts:

The proposed remediation activities would contribute little to any soil losses at the time of the work and would result in lower erosion potentials over time.

Mitigation:

None

4.2.2 Alternative B

Direct Impacts:

Activities and impacts associated with project closure would be similar to those discussed in the previous section.

Indirect Impacts:

The indirect outlined above would apply during all stages of project activities.

Mitigation:

None

4.2.3 Alternative C

Under the no action alternative, impacts to soils still occur at some level due to casual use by the public at the site.

4.3 Cultural Resources

4.3.1 Alternative A - Proposed Action

Direct Impacts:

The Whitmore Mine (P-15-016228/CA-KER-8970/H) and Gum Tree Mine (P-15-016227/CA-KER-8969H) have been determined not eligible for listing on the National Register of Historic Places as individual resources. As a result of Class III cultural resource inventory and the associated literature review by ESA (Bray et al 2012, CA-650-12-52), however, 26 features within the two mines have been identified as potentially contributing to the Mojave Mining District. Research and identification of the Mojave Mining District has not been completed as it is outside of the scope of this project. Regardless, the BLM is proposing remediation methods that would avoid unnecessary damage to the 26 potentially contributing features and that would not preclude future options for

research, preservation and protection. Of the 26 recommended as contributing, the BLM is proposing action on 20 of the features. Table 1 provides the proposed remediation activities for the contributing and non-contributing features. Contributing features are noted.

Remediation activities would be limited to the modern hazmat and solid waste deposits, and the mining features deemed a threat to health and human safety. All standing structures located within the Whitmore and Gum Tree Mine sites will be left intact. Modern trash and loose debris within and around the structures will be removed by hand to ensure minimal impact to the structures. Further evaluation on the standing structures will be completed at a later date. Areas where prehistoric archaeological features and deposits have been identified will be avoided during the remediation project.

To reduce any visual effects to the historic setting or integrity of the features potentially contributing to the larger, yet to be identified Mojave Mining District, the remediation will include the following measures or conditions.

1. All wildlife gates will be constructed of untreated steel that will be allowed to weather. Weathering will allow the metal to change to a natural color that will minimize or eliminate any noticeable visual changes to the historic setting, and create the effect of blending into the existing remnants of the historic mining setting.
2. All timbers, cribbing, or other features that retain integrity, are contributing to the eligibility of the potential district and are associated with mine adits, shafts, or prospects proposed for remediation by this project will be left intact. Frames for wildlife-friendly grates and cupolas will be built above or surrounding so as not to disturb the structural integrity of the features.
3. No other features at any mine proposed for remediation will be affected by this project. Only the individual mine adit, shaft, or prospects addressed in the proposed action will be subject to remediation activities.
4. Access to each mine is limited to existing roads and only the individual adits, shafts, and prospects identified will be affected by the remediation activities.
5. Before and after photographs of each remediation activity will be taken. The appropriate DPR forms for the Whitmore and Gum Tree sites will be updated with the photographs and submitted to the Southern San Joaquin Valley Information Center.

The BLM has found that remediation of the above described mining features will have no adverse effect to the Whitmore Mine or Gum Tree Mine, which are not eligible for listing to the National Register of Historic Places. However, because the sites contain features potentially contributing to the larger Mojave Mining District, the BLM finds that through the imposition of the measures outlined above, the remediation will not alter any of the characteristics or values that would qualify the district for inclusion on the NRHP.

Indirect Impacts:

Visual integrity of historic and/or scenic values will not be compromised by remediation following the stipulations described above.

Nine prehistoric features and one feature of unknown association were identified within the project area. These features will be avoided during ground disturbing activities. Prior to activity on site, a BLM archaeologist will delineate a reasonable boundary area around each feature to ensure no impacts occur.

In the event subsurface cultural resources are encountered during ground disturbing activities where they have not been previously identified, project activities would cease until appropriate consultation could be conducted with the California SHPO and THPOs when appropriate, as outlined in Instruction Memorandum (IM) CA-

2010-024 (Appendix F). Mitigation measures to address these resources would be developed by BLM, the SHPO, and the THPOs when necessary and implemented before project activities recommence.

Cumulative Impacts:

Following implementation of all mitigation measures, there may be residual impacts to cultural resources from the alteration of the visual aspects of the historic features. These impacts will not alter the integrity of the historic features following the closure methods and debris removal strategies described above and designed to minimize impacts. Removal of modern trash and loose debris will have a positive impact to the overall integrity of the site, as further vandalism and illegal dumping may be discouraged where BLM demonstrates care and attention to resources. Residual impacts to prehistoric and ethnographic resources are not anticipated.

Mitigation:

In addition to the treatment measures discussed above, the following mitigation measures would be implemented to minimize potential impacts to cultural resources:

- All BLM or contractor personnel performing abandoned mine site restoration actions would be educated to identify cultural resources.
- A cultural resources specialist would identify significant resources prior to activities on site and provide direction to the individuals performing the activities about how to avoid these resources.
- Where appropriate, a cultural resources monitor would remain on site during activities to direct remediation activities near significant resources.
- Remediation actions would immediately cease if previously unrecorded sites, features or artifacts are discovered.
- Any historical or cultural artifacts discovered by the BLM employees or any person working on the BLM's behalf, on public or federal land shall be immediately reported to the BLM cultural specialist. The BLM or its contractors would suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM. An evaluation of the discovery would be made by the BLM to determine the appropriate actions to follow to prevent the loss of significant cultural or scientific values

4.3.2 Alternative B

Direct Impacts:

Activities and impacts associated with project closure would be similar to those discussed in the previous section.

Indirect Impacts:

The indirect outlined above would apply during all stages of project activities.

Mitigation:

The mitigation measures outlined above would apply during all stages of project activities.

4.3.3 Alternative C

Under the no action alternative, no impacts to cultural and paleontological resources would occur.

4.4 Vegetation (including Threatened and Endangered Species)

4.4.1 Alternative A - Proposed Action

Direct Impacts:

As backfill and gating operations would be anticipated to use existing, already disturbed material around the mine site and AML features some common species of plants may be directly destroyed by the action. Some plants may be destroyed or otherwise impacted by the heavy equipment operating at the site. These impacts should be more than offset by the natural reclamation and reduced site use in the future. Any sensitive plant species will be marked and avoided. As the mine features where the proposed action would occur have been previously disturbed by mining activity, some common, pioneer plant species will be directly destroyed. When heavy equipment accesses mines, disturbance to previously undisturbed areas could occur, for example, desert wash vegetation could be impacted.

Indirect Impacts:

The impacts are expected to occur during the duration of the proposed use of the site and in the immediate site vicinity. Once the action is completed the site should return to pre disturbance.

Cumulative Impacts:

A decrease in total perennial vegetation biomass for the immediate area would occur within the first year however it is expected to regenerate eventually.

Mitigation:

1. Ground disturbance will be kept to a minimum and vehicles including heavy machinery will remain within the previously disturbed areas whenever possible.
2. Compacted soils from illegal routes and other disturbance will be ripped to allow for natural revegetation.

4.4.2 Alternative B

Direct Impacts

Activities and impacts associated with project closure would be similar to those discussed in the previous section.

Indirect Impacts

The indirect outlined above would apply during all stages of project activities.

Mitigation

The mitigation measures outlined above would apply during all stages of project activities

4.4.3 Alternative C

Under the no action alternative, no impacts to vegetation resources would occur.

4.5 Wildlife Resource (including Threatened and Endangered Species)

4.5.1 Alternative A - Proposed Action

Direct Impacts:

Many species of wildlife utilize abandoned mines for foraging, nesting, and shelter. Desert Tortoises are known to take refuge from the desert heat in abandoned mines. No tortoise sign, however, was found during the wildlife/tortoise surveys. A number of birds including burrowing owls, barn owls, and Say's Phoebe construct nests in abandoned mines. Many of the mine features are within the Mohave Ground Squirrel Conservation Area, but MGS are not known to utilize the abandoned mines. Abandoned mines play a critical role for many bat species and provide habitat for a variety of roost types including migratory stops, hibernacula, maternity, day roosts, mating sites and night roosts. BLM Instruction Memorandum 93-304 requires that "... all abandoned mines on the BLM -administered lands, prior to their closure, will be evaluated/investigated to determine if they are of value to sensitive wildlife, especially bats. In general, vertical openings less than 20 feet deep with no horizontal drifts are unlikely to harbor bats. Deeper vertical openings, those with horizontal components, and horizontal openings should be surveyed for bats and other wildlife before permanent closure (BLM Instruction Memorandum No. 93-304: Closure of Abandoned Mines and Preservation of Bat Habitat).

Indirect Impacts:

Even if bats are not killed during closure, the elimination of valuable roosting habitat is an impact to bats and other wildlife. Destruction of vegetation could have an indirect negative impact on various wildlife species including Mohave ground squirrel and burrowing owl. No burrowing owl sign was noted during any of the wildlife surveys.

Cumulative Impacts:

Hard closures of mines eliminate habitat permanently and many closures in an area can add up over time.

Mitigation:

Sites for which closure activities other than simple fencing are proposed must be surveyed using these specifications before closure. This will typically involve detailed surveys made at appropriate times of year, ideally during all four seasons. All surveys will be conducted in accordance with BLM policy which permits only appropriately trained and equipped personnel to conduct underground activities. In general, surveys will be conducted externally and no underground surveys will be done except in sites with a high probability of having significant use by hibernating bats. Often both internal and external surveys are necessary to ascertain wildlife use and mine connections.

Features that have a gate prescribed shall have an internal inspection performed prior to the installation by the BLM or other qualified individuals (e.g. a bat biologist) to ensure that bats are not hibernating at the gate location and that desert tortoise are not residing inside the mine at the time of installation.

For features that have a PUF or backfill closure prescribed, the BLM's biologists will take precautions to exclude any wildlife that may be present. The process, which takes several days, allows any bats or owls to leave the mine (but not return) at dusk prior to the installation of the closure. For shafts and adits that did not require an exclusion, the BLM or other qualified individuals will enter the mine or look into it with a spot light immediately prior to hard closure to ensure no owls or tortoises are within it.

Ground disturbance will be kept to a minimum and vehicles including heavy equipment will remain within the previously disturbed areas whenever possible. If work continues into early April, nesting birds must be considered as vegetation is disturbed.

Protective measures for small disturbances within tortoise habitat (also protects Mohave ground squirrel habitat) must be followed:

1. A Wildlife Biologist should clear the site for burrows, etc. before the onset of mine closing and should remain onsite if during tortoise active season.
2. All employees working on this project have, or will have, knowledge of the desert tortoise and that no take of the tortoise will take place as a result of this activity.
 - distribution of the desert tortoise,
 - general behavior and ecology of the tortoise,
 - sensitivity to human activities,
 - legal protection,
 - penalties for violation of State and Federal laws,
 - reporting requirements, and
 - project protective mitigation measures.
3. Only biologists authorized by the U.S. Fish and Wildlife, California Department of Fish and Game, and the Bureau of Land Management shall handle desert tortoise.
4. The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors.
5. Where practical, no access road shall be bladed to the project site. Designated routes will be used.
6. Workers shall inspect for tortoises under a vehicle prior to moving it. If a tortoise is present, the worker shall carefully move the vehicle only when necessary and when the tortoise would not be injured by moving the vehicle or shall wait for the tortoise to move out from under the vehicle.
7. No dogs shall be allowed at a work site in desert tortoise habitat.
8. Except on county-maintained roads, vehicle speeds shall not exceed 20 miles per hour through desert tortoise habitat.
9. All trash and food items shall be promptly contained within raven-proof containers. These shall be regularly removed from the project site to reduce the attractiveness of the area to ravens and other tortoise predators.

4.5.2 Alternative B

Direct Impacts

Activities and impacts associated with project closure would be similar to those discussed in the previous section.

Indirect Impacts

The indirect outlined above would apply during all stages of project activities.

Mitigations

The mitigation measures outlined above would apply during all stages of project activities

4.5.3 Alternative C

Under the No Action alternative, there could be potential adverse impacts to biological resources including the disturbance to wildlife of publics entering a mine. Also, under the current emergency closure process, there is only minimal attention directed toward avoiding, minimizing, or mitigating potential adverse impacts. Potential adverse impacts would vary by AML site and depending on the nature of wildlife use of the feature and the

presence of threatened and endangered species in and around the area. Impacts could include injury of wildlife during vehicle transit and site operations from vehicle use or elevated noise levels. Other impacts could include permanent loss of habitat through closure of AML features at which biological surveys were not conducted. Additionally, current conditions include the possibility of wildlife becoming injured or trapped in the mines. Therefore, potential impacts to biological resources as a result of the no action alternative could be minor to significant depending on the location of the impacts and the nature of wildlife use in the AML feature and the surrounding area.

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Remediation of Abandoned Mine Land Physical Safety Hazards and Solid Waste Removal at the Gum Tree and Whitmore Mine Sites

NEPA Log Number: DOI-BLM-CA-D050-2013-075

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required (no signoff required)

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Air Quality	Processing taking place off-site. Expected emissions from mining activities to stay within thresholds for PM10 emissions.	JGicklhorn	11/05/13
NP	Areas of Critical Environmental Concern	Site is not within any designated Area of Critical Environmental Concern	RPorter	11/6/13
NI	Cultural Resources	No adverse effect to Cultural Resources. See Cultural Resource Report CA-650-2012-52	ABlythe	2/13/14
NI	Greenhouse Gas Emissions**	Greenhouse Gas emissions for the three mining vehicles will be consistent with standard point-source emissions and will not exceed thresholds.	JGicklhorn	11/05/13
NI	Environmental Justice			
PI	Geology / Mineral Resources/Energy Production	Land Use Plans hold that mineral development is allowed in Class M and L lands subject to assessment under NEPA	RPorter	11/6/13
NI	Livestock Grazing			
NP	Paleontology	Low Potential for the occurrence of paleontological resources	RPorter	11/6/13
NI	Rangeland Health Standards			
NI	Recreation			
NI	Socio-Economics			
PI	Soils	Mining activities will remove topsoil and clay deposits. Development of site facilities and access road must stay within specified area.	JGicklhorn	11/05/13
PI	Threatened, Endangered or Candidate Plant Species		CWoods	2/1/2014
PI	Threatened, Endangered or Candidate Animal Species		CWoods	2/1/2014
PI	Water Resources/Quality (drinking/surface/ground)	Surface water is not expected to drain out of the bowl, and therefore contaminated surface runoff is not an issue.	JGicklhorn	11/05/13

Determination	Resource	Rationale for Determination*	Signature	Date
NP	Wetlands/Riparian Zones	Not Present.	JGicklhorn	11/05/13
NP	Wild and Scenic Rivers	Not Present.	JGicklhorn	11/05/13
NI	Wilderness/WSA			
PI	Vegetation	Vegetation will be removed from the mine site, however as a previously disturbed and authorized site, this is acceptable.	JGicklhorn	11/05/13
NI	Visual Resources			
NI	Wild Horses and Burros			

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

Appendix 1

Table 1

Table 1. Whitmore & Gum Tree Abandoned Mine Land Features and associated items				
#	Feature Type	Appendix E Reference	BLM Recommendation (proposed action)	Comments
1	trash	A2	remove trash, hand removal	clean up by hand removal
2	trash	A3	remove trash, hand removal	clean up by hand removal
3*	decline mine shaft	A14	install a raised air-grate, protect lumber	portal 4'x6', w/in 100' of rd; urban interface
4	mine adit	A27	install a culvert gate	3x4, partially collapsed, 15' wood rat use
5*	mine shaft	A28	install a raised air-grate, protect lumber	located above the road; portal 4'x6' ; stable ; west aspect
6	decline shaft	A58	hard close	west facing, side of hill
7	lumber	A78	dispose of trash and debris	dispose of trash and debris
8	mine shaft	B2	hard close	portal 8'x8'; antlion;next to rd; urban interface
9*	mine shaft	B4a	install a raised air-grate, protect lumber	portal 6'x6',wood lumber; urban interface, backfill
10	subsidence	B7	reshape vertical walls	subsidence 30'x30'x6', next to travel route, mine collapse underground, reshape sides 3:1 slope
11	well-head	B8	weld a lockable cap onto pipe	
12	well-head	B10	weld a lockable cap onto pipe	
13*	standing structure	B11a	Dispose of modern trash, loose debris	dispose of trash and debris
14	structure debris	B11b	remove debris, leave foundation	dispose of trash and debris
15*	mine shaft	B13	install a raised air-grate, protect lumber	portal 4'x6';collapsed next to rd
16	mine shaft	B14	hard close	portal 8'x8; antlion next to rd; urban interface
17*	main shaft	B15a	install a raised air-grate, protect portal lumber, remove collapsed headframe	portal 4'x8'; collapsed headframe; urban interface
18*	structure remains	B15b	Dispose of modern trash, loose debris	dispose of trash and debris
19	mine shaft	B19	remove shingles and hard close	portal 16'x16', antlion, w/in 10' of rd; urban interface, backfill

20	mine shaft	B20	hard close	portal 6'x6',w/in 10' of rd; urban interface, backfill
21*	mine shaft	B21	install a stealth cupola, protect lumber	portal 5'x5-collar cribbing , fenced, antlion portal
22	mine shaft	B22	hard close	portal 6'x6',w/in 10' of rd; urban interface, backfill
23	mine shaft	B25	install a stealth cupola	portal 8'x6', collar cribbing, cupola, stopes both sides of shaft, owl presence. w/in 10' of rd; urban interface
24	mine shaft	B29	hard close	portal 8'x6',w/in 10' of rd; urban interface, backfill
25	mine shaft	B31	hard close	portal 3'x3-antlion, w/in 10' of rd; urban interface, backfill
26*	mine shaft	B40	install a raised air-grate, protect lumber	portal 5'x5-collar cribbing , whitewash ,w/in 10' of rd; urban interface, backfill
27	mine shaft	B42	hard close	portal 8'x8, antlion,w/in 10' of rd; backfill, urban interface, backfill
28*	mine shaft	B43	install a raised air-grate, protect lumber	portal 8'x6', collar, collapsed shaft ,w/in 10' of rd; backfill, urban interface, backfill
29	mine shaft	B44	hard close	portal 12'x12' antlion,potential collapsed shaft ,w/in 10' of rd; backfill, urban interface, backfill
30	mine shaft	B45	hard close	portal 8'x6', backfill ,w/in 10' of rd;
31	collapsed mine shaft	B46	hard close	portal 2'x4', backfill floor of shaft, protect lumber in place
32*	mine shaft	B51	install a stealth cupola	portal 8'x6', collar cribbing, w/in 100' of rd; urban interface
33	lumber/trash	B60	remove	dispose of trash and debris
34*	lumber/trash	B63	Dispose of modern trash, loose debris, leave foundation	dispose of trash and debris
35	collapsed septic tank	B64	backfill	
36*	structure	B66	Dispose of modern trash, loose debris, leave foundation	tested for asbestos (not present)
37	structure remains	B69	remove debris, leave foundation	dispose of trash and debris
38*	mill site	B70	Dispose of modern trash, loose debris, leave foundation	dispose of trash and debris
39*	structure	B71	Dispose of modern trash, loose debris, leave foundation	tested for asbestos (not present)
40	structure remains	B72	remove debris, leave foundation	dispose of trash and debris

41	mine shaft	B73	hard close	above road & dynamite storage cellar
42	mine shaft	B76	hard close	shaft collapsed from fire; back fill
43*	retaining wall	B78	Dispose of modern trash, loose debris	
44*	structure	B82	Dispose of modern trash, loose debris, leave foundation	dispose of trash and debris
45*	mine shaft	B83	install a raised air-grate, protect lumber	portal 4'x8'next to rd; urban interface
46	corrugated metal	B84	remove	dispose of trash and debris
47*	structure and debris	B85	Dispose of modern trash, loose debris, leave foundation	dispose of trash and debris
48	structure and debris	B86	Dispose of modern trash, loose debris, leave foundation	dispose of trash and debris
49*	railcar	B87	Dispose of modern trash, loose debris	dispose of trash and debris
50	corral	B88	remove lumber on the ground, leave corral	dispose of trash and debris
51	modern shop building	na	demolish and remove, leave foundation	tested for asbestos (not present)
52	shop waste and debris	na	remove tires and trash	vagrants lived in the shop up until 1 year ago

*Indicates character defining feature