

United States Department of the Interior
Bureau of Land Management
Las Cruces District Office
1800 Marquess
Las Cruces, NM 88005



ENVIRONMENTAL ASSESSMENT
For
Mossman Arroyo Community Pit

NW $\frac{1}{4}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$ of sec 28, T. 24 S., R. 3 E. N.M.P.M.,
Dona Ana Co., NM

NW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$ of sec 33, T. 24 S., R. 3 E. N.M.P.M.,
Dona Ana Co., NM (340 acres more or less)

NMNM120786

Bureau of Land Management – Las Cruces District

Michael Smith: GEOLOGIST

MARCH 28, 2011

Signature and Title of Project Lead

Date

Juanita Montoya Planning Coordinator

3/28/11

Signature and Title Lead of Reviewer

Date

NEPA Number: DOI-BLM-NM-L000-2010-0137-EA

FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment

DOI-BLM-NM-L000-2010-0137-EA

Mossman Arroyo Community Pit

Based on the analysis of potential environmental impacts contained in the referenced environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that designating the Mossman Arroyo Community Pit will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

District Manager

Date

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1 INTRODUCTION

A Community Pit (CP) is defined as “a relatively small, defined area from which BLM can make disposals of mineral materials to many persons” (43 CFR 3601.5). The designation of a Community Pit, when noted on BLM records and posted on the ground, establishes a right to remove mineral materials superior to any subsequent claim or entry of the lands (43 CFR 3603.11). With continued growth in the Las Cruces Community, the Las Cruces District Office (LCDO) is expecting increases in demand for aggregate materials (sand and gravel) for construction and infrastructure maintenance purposes. The designation of the Mossman Community Pit area would facilitate meeting this need by defining an area for mineral materials disposals with defined environmental protection and mitigation requirements.

1.1 Purpose and Need

This proposal would designate a maximum of 340 acres of public domain lands as a Community Pit for the disposal of mineral materials (sand and gravel) consistent with Federal regulations defined at 43 CFR 3603.10 – 14. A community pit designation would facilitate development of a reliable supply of aggregate materials for the local community.

1.2 Decision to be Made

This analysis will determine whether all, none, or a part of the identified 340 acres of Public Domain lands will be designated a Community Pit (CP) in conformance with applicable regulations. If it is determined a CP can be designated, this analysis will also identify specific mitigation measures and operational stipulations that shall be applied to users of the CP.

1.3 Plan Conformance

This proposed action conforms to the Mimbres Resource Management Plan, approved December, 1993, because it is clearly consistent with the following decisions, objectives, and conditions of the RMP:

1. All ACECs, RNAs and>NNL and the Butterfield and Continental Divide Scenic Trails are closed to mineral material disposal (*Mimbres RMP, 1993, p. 2-6*). **The proposed community pit area is not within these restricted areas.**
2. The remainder of the resource area is open to mineral materials disposals, subject to standard stipulations (*Mimbres RMP, 1993, p. 2-7*).
3. A competitive sale program will be established; the site(s) will be determined later based on mineral surveys and will probably be within 10 miles of Las Cruces (*Mimbres RMP, 1993, p. 2-7*).

1.4 Scoping and Issues

1.4.1 Internal Scoping

The proposed action was originally presented to the LCDO NEPA Interdisciplinary (ID) Team on June 7, 2010. ID team review was completed on January 14, 2011.

1.4.2 External Scoping

This EA and the corresponding Finding of No Significant Impact (FONSI) is available for a thirty day public comment on the Las Cruces BLM NEPA website:

http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/LCDO_NEPA.html

Courtesy letters informing range permittees, government entities, and other selected parties were sent to inform them of the availability of this document for comment.

1.4.3 Resource Issues Identified

Air Quality: Aggregate mining could result in the degradation of local air quality conditions by airborne dust mobilization, particularly during high-wind events

Paleontology: In the quaternary geologic units (Santa Fe group) associated with the CP area, vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented outside of the proposed CP area. Ground disturbing activities could damage or displace possible fossil resources.

Vegetation: Desirable plants species such as ocotillo (*Fouquieria splendens*), hedgehog cactus (*Echinocereus engelmani*) and barrel cactus (*Ferocactus wislizenii*) are documented to occur within the limits of the proposed CP. Aggregate mining could result in the loss of multiple specimens of these plants.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The proposed action would designate a 340 acre area south of Mossman Arroyo as a Community Pit (CP) for disposals of mineral materials. This area is selected because it is the site of past aggregate mining, it is in proximity to areas of aggregate need, and is free of mining claims, mineral leases and other

encumbrances on the Federal mineral estate. The Mossman Arroyo CP site would be available for future competitive and non-competitive sales of mineral materials, and for free use permits issued for infrastructure improvement projects. A map of the proposed Mossman CP area is displayed in Figure 1. The Community Pit designation would last for ten years with a projected production of 500,000 cubic yards.

Historic aggregate mining activities in Mossman Arroyo suggest that it is unlikely that the entire 340 acre community pit site would be in production at any given time. Mining would begin near existing roads and aggregate operations in the north part of the proposed CP area, and subsequently move south as reserves are depleted. Mining operations would occur in stages:

Exploration: Prior to beginning mining operations, exploration work will be necessary to estimate reserves and test geotechnical properties of materials. Exploration for aggregate is commonly completed by trenching using a wheeled or tracked backhoe or excavator, or by auger drilling from truck-mounted drill rigs. In a typical exploration scenario, equipment would be staged on BLM land and subsequently driven overland to the testing site. Temporary access routes may be necessary depending on the equipment used. Past experience with aggregate exploration in the LCDO suggests that operations would not exceed two weeks or create more than five acres of new surface disturbance. All exploration activities would require appropriate reclamation including filling of trenches, plugging drill-holes and restoring all disturbed areas. All exploration activities would be subject to the written notification and bonding requirements as defined in 43 CFR §3601.30.

Production: will be similar to mineral materials operations currently authorized in parts of Mossman Arroyo:

a. ***Access:*** Along the existing County road and the I-10 interchange at Mesquite. Initially, no new roads are required as there is existing access to the proposed CP (see map 1). Additional access roads may become necessary to access undeveloped sections of the CP area. Any new roads would be staked on the ground and recorded using GPS, and would be built to BLM single-lane, all weather standards. Road maintenance would consist of occasional grading and filling of ruts or washouts by the operators.

b. ***Site Preparation:*** Prior to initiating operations, the operator shall designate the operations area in the field with BLM personal and shall assume all responsibility for maintaining operational area boundary markers. The operator shall also designate the locations of the equipment staging area(s), grizzly unit, and vibratory screening plant. BLM will record these locations using GPS and will attach a map of the operations area to the final contract or permit. Soil and vegetation may be cleared using dozer or other appropriate equipment as needed. Available topsoil and vegetation will be stockpiled for reclamation within the designated operations area.

c. ***Aggregate Production:*** The operator will provide a list of all production equipment to the LCDO and update this list as necessary. Each operator shall be limited to two pieces of production and operations equipment not to exceed 70,000 lbs GVW. Equipment can include wheeled backhoe loaders, wheeled front-end loaders, tracked dozer/rippers and tracked excavators. Sand and gravel will be stripped or block-caved from the existing grade or slope. If caliche is encountered, it shall be ripped or mechanically broken and hauled to the stockpile area. The use of explosives should be unnecessary and will not be permitted. Materials will be transported to the processing facility or stockpile site by the production equipment or by

dump truck. Working faces shall be benched a minimum of 8' for each 10' of working face height, or sloped to a maximum 2:1.

d. **Processing:** The operator will provide a list of all processing equipment to be used on site and a diagram of the processing circuit. Operators may install grizzly units to remove large cobbles and boulders from the production stream. A portable vibratory screen unit may be emplaced on site to sort aggregate by size. One or more conveyor units will be allowed to stack oversized materials. Equipment requiring concrete footing, foundations or other permanent installations is prohibited. Stockpile areas for waste fractions will be located within the designated operating area.

All equipment must be necessary and required for regular mining operations. Equipment used on an irregular or infrequent basis shall not be permanently staged on site, but rather bought on-site on an as-needed basis.

e. **Portable structures or facilities:** Are limited to approved sanitary facility (portable toilet) provided by a licensed vendor and a maximum of two portable sheds not to exceed 15' x 15' footprint for storing tools and spare parts. A maximum of three mobile water tanks not exceeding 2,000 gallons will be permitted if included on the equipment list.

The above operational parameters will be enforced as with contract/permit stipulations, summarized in Appendix 1. Asphalt preparation, aggregate washing or concrete and asphalt recycling are not authorized in this analysis.

Reclamation: Reclamation of mined areas will include the following:

- Reducing highwalls to a maximum 3:1 slope.
- Terracing or benching reclaimed highwalls for runoff control
- Removal or disposal of screen waste fractions
- Scarify or disk-tilling disturbed areas prior to seeding.
- Seeding with a BLM-formulated seed mix (appendix 2).
- Application of weed-free straw mulch (2 tons/acre)
- Removal and disposal of all equipment, trash and debris.

Reclamation costs have been estimated by the LCDO and adjusted for ten years of inflation. Commercial operators working under the terms of the Mossman CP MPO will be charged a per-unit reclamation fee. This fee will be paid in addition to the production royalty, and would fund a dedicated account to be used for concurrent reclamation of mined areas over the lifetime of the CP. This per-unit reclamation fee is assessed at 50¢ per cubic yard. Commercial users of the Mossman Community Pit may also request to reclaim their operation areas themselves at the end of their contract or permit. In these cases, the operators would not pay the per-unit reclamation fee but would provide an acceptable reclamation bond before beginning operations (43 CFR §3603.22). Free-use permittees would be required to complete reclamation at the expiration of their permit, but the LCDO may require a reclamation bond from a free-use permittee if necessary.

2.2 No Action Alternative

The BLM NEPA Handbook (H-1790-1) states that for Environmental Assessments (EAs) on externally initiated proposed actions, the No Action Alternative generally means that the proposed action would not take place. In this case, the proposed Mossman CP would not be designated. This would not, however, close the Mossman Arroyo area from future mineral materials disposals, and the LCDO may still receive requests for mineral materials contracts from individual producers. For this analysis, however, the No Action alternative will assume no further aggregate mining within the limits of the proposed CP in order to provide a baseline for determining affects.

Under the No Action alternative, it is further assumed that existing aggregate mining operations would continue on State and Private land within Mossman Arroyo, because BLM decisions would not apply to these non-Federal lands.

3 AFFECTED ENVIRONMENT

The proposed action is located on Federal surface and mineral estate approximately 12 miles southeast of the City of Las Cruces, Dona Ana County, New Mexico (figure 2). The legal description of the area under consideration is:

NW¹/₄SW¹/₄, NE¹/₄SW¹/₄, N¹/₂NW¹/₄SE¹/₄, W¹/₂SE¹/₄SE¹/₄, SW¹/₄SW¹/₄ of sec 28, T. 24 S., R. 3 E.
NW¹/₄NW¹/₄, W¹/₂NE¹/₄NW¹/₄, SW¹/₄NE¹/₄, SE¹/₄NW¹/₄, SW¹/₄NW¹/₄ of sec 33, T. 24 S., R. 3 E. N.M.P.M.,
(340 acres more or less)

The Mossman Arroyo area consists of undeveloped Chihuahuan desert brushland, and has been the site of past aggregate mining on Federal, State of New Mexico, and private land (figure 3). Temperatures range from an average daily minimum of 21.1°F in January to an average daily maximum of 95.0°F in July. Average monthly precipitation ranges from 0.21 inches in April to 2.05 inches in August, with a total average annual precipitation of 9.9 inches/yr. Winds are typically from the west with an average wind speed ranging from 6 mph in December to 10.1 mph in April (Western Regional Climate Center, 2011).

3.1 Air

The area of the proposed action is considered a USEPA Class II air quality area. A Class II area allows moderate amounts air quality degradation, and there are no Class I air quality areas in the vicinity of the proposed community pit. Throughout most of the year, the air quality is good and the air is considered clean. Carbon monoxide and ozone levels are elevated on rare occasions when temperature inversions prevent the escape and dispersion of air to the upper atmosphere. During the dry spring months, windstorms and blowing dust can become a problem throughout Dona Ana County. In 1999, monitors throughout Dona Ana County recorded 16 days which exceeded National Ambient Air Quality Standards (NAAQS) for airborne particulate matter (PM₁₀). Excessive dust in the air can impair visibility and, when breathed, be potentially harmful to people with respiratory conditions. A Natural Events Action Plan was prepared for Dona Ana County and released in December, 2000 by the Air Quality Bureau of the New Mexico Environment Department.

3.2 Cultural and Native American Religious Concerns

A systematic cultural resources inventory has been completed for the proposed Mossman Arroyo Community pit area. This inventory identified areas with high concentrations of (possibly) Archaic artifacts. The boundaries of the proposed Mossman Community Pit were subsequently adjusted to exclude this area of artifact concentration. A New Mexico Cultural Resource Inventory System (NMCRIS) Investigation Abstract Form (NIAF) is being prepared for the New Mexico State Historic Preservation Office. Isolated occurrences of artifacts were identified throughout the proposed community pit area. None of these isolated occurrences were determined to be significant or eligible for the National Register of Historic Places.

A traditional cultural property (TCP) as defined in National Register Bulletin 38 "...can be defined generally as one that is eligible for the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community."

A sacred site as defined by Executive Order No. 13007 "...means any specific, discrete, narrowly delineated location of Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site."

3.3 Water Resources

Surface Water: The proposed CP area is drained by intermittent arroyos that form first-order tributaries to the Rio Grande. These arroyos only flow during or immediately after precipitation events and do not have a permanent base flow component to their discharge. Most of the proposed CP (approximately 210 acres) drains into by Mossman Arroyo which flows southwest towards the Rio Grande. Portions of the southern part of the proposed CP are drained by two unnamed arroyos which flow south-southwest towards the Rio Grande. Downstream of the proposed CP, the natural drainage patterns in these arroyos are altered by dams, irrigation diversions, fill and road building. The area along the County road in the northwest corner of the proposed Community Pit is designated as flood zone "A" (100-yr floodplain, flood elevation not determined) on FEMA Flood Insurance Rate Maps

Ground Water: The Santa Fe group (Oligocene-Pleistocene) forms the major aquifer in the region and consists of a thick sequence of alluvial, eolian and lacustrine sediments deposited in the intermountain basins of the Rio Grande rift valley. Depths to water table generally exceed 380' (New Mexico Office of the State Engineer, 2010) and total dissolved solids values exceeding 1,000 mg/l occur at depths of 1500-3000 feet (Hawley, 1984; Hawley and Lozinski, 1992).

3.4 Paleontology

Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur in the quaternary geologic units (Santa Fe group) associated with the CP area (Morgan et. al. 1998). Upper

Santa Fe Group has a Potential Fossil Yield Classification (PFYC) of 4 or 5 (locally). Documented fossil remains have been found in the Camp Rice, Tesuque, Palomas, Popotosa, Sierra Ladrones, and Zia Formations within the Santa Fe Group. Assessment prior to surface disturbing activity is necessary. Fossils of Pleistocene camels and horses have been discovered on private land north of the proposed Community Pit site (section 21 and 28, T. 24 S. R. 3 E.). These fossils consisted of isolated bones or bone fragments preserved in fluvial members of the Santa Fe formation, but no complete vertebrate skeletons have been discovered to date (Mark Hakkila, BLM Las Cruces District Office, personal communication, 2009).

3.5 Soils

The following soils types are mapped within the proposed community pit area (U.S. Soil Conservation Service, 1980):

Bluepoint loamy sand (1-15% slope): Occurs in a small portion (approximately 10% of total area) of the proposed community pit along the channel bottom of Mossman Arroyo. It is formed in sandy alluvium along fans, terraces and ridges in the upper Rio Grande valley. Soil depth is approximately 60" and the root zone extends through the entire depth. Permeability is rapid and water capacity and organic matter content is low. The water erosion hazard is rated as slight and the wind erosion hazard is rated high. This soil is not irrigated and is used for grazing, wildlife habitat and urban development (U.S. Soil Conservation Service, 1980).

Bluepoint Caliza-Yturbide complex: Occurs in the remainder of the proposed community pit are, upslope for the channel of Mossman Arroyo. This complex consists of loamy sand and gravelly-loamy-sand on dissected fans and terraces along the Rio Grande valley. The Caliza soil is high in calcium carbonate (caliche) and ranges between 35 to 70 percent gravel. Permeability ranges from moderately rapid to rapid and the organic matter content is low. Surface runoff ranges from slow to medium. The water erosion hazard is slight while the wind erosion hazard is high. Identified uses for this soil are grazing and wildlife habitat (U.S. Soil Conservation Service, 1980).

3.6 Range

The proposed site for the Community Pit is within the Bishop's Cap allotment. The grazing permit for the Bishop's Cap allotment #15009 authorizes 151 Cattle Yearlong (CYL), or 1649 Federal AUM's, from March 1 to February 28 each year billed at 91%.

3.7 Vegetation

The proposed Mossman Community Pit site is within a Southern Desertic Basins, Plains and Mountains (SD-2) gravelly range site. The area is in a creosotebush state with very low perennial grass cover. The vegetation is sparse, providing less than 20% ground cover. The site is dominated by creosote (*Larrea tridentata*) with a subshrub component of range ratany (*Krameria erecta*). Other occasionally occurring shrub species include whitethorn acacia (*Acacia constricta*) and honey mesquite (*Prosopis glandulosa*).

Bush muhly (*Muhlenbergia porteri*) and threeawn (*Aristida* L.) are present at the base of very few shrubs. There are some succulents present including ocotillo (*Fouquieria splendens*), yucca (*Yucca* L.), hedgehog cactus (*Echinocereus engelmannii*), barrel cactus (*Ferocactus wislizenii*) and pricklypear cactus (*Opuntia engelmannii*). The pricklypear is not in good condition showing high mortality at the site for unknown reasons. Greater species variety is present in the drainage bottoms. These areas have higher amounts of bush muhly present within the shrubs, which include littleleaf sumac (*Rhus microphylla*), longleaf ephedra (*ephedra trifurca*), honey mesquite, apache plume (*Fallugia paradoxa*), snakeweed (*Gutierrezia microcephala*) and desert willow (*Chilopsis linearis*)

3.8 Invasive Species and Noxious Weeds

The following invasive, non-native plant species have been identified in Dona Ana County:

- Russian knapweed (*Acroptilon repens*)
- Jointed goatgrass (*Aegilops cylindrica*)
- Camelthorn (*Alhagi maurorum*)
- Whitetop (*Cardaria draba*)
- Malta starthistle (*Centaurea melitensis*)
- Field blindweed (*Convovulus arvensis*)
- Saltcedar (*Tamrix ssp.*)
- Perennial Pepperweed (*Lepidium latifolium*)
- Russian Olive (*Elaeagnus angustifolia*)
- Onionweed (*Asphodelus fistulosus*)
- African Rue (*Peganum harmala*)
- Siberian elm (*Ulmus pumila*)

Common locations for invasive, non-native species include roadsides and recently disturbed areas. A review of BLM site inspection records from 2008 to 2010 has not identified any invasive or noxious weed infestations at aggregate mines currently authorized on the Federal lands.

3.9 Wildlife

The east mesa of Las Cruces provides habitat for approximately 40 species of native mammals, 25 species of Herptiles, and almost 200 species of birds. Many of the birds are seasonal. Lists of wildlife species occurring by habitat type are available from the BLM Las Cruces District Office. Wildlife habitat in the proposed action area consists of mixed shrub rolling upland, including creosote, mesquite, yuccas, little-leaf sumac, and bunch grasses including mesa dropseed, sand dropseed, and plains bristlegrass.

3.10 Special Status Species

Special Status Plant Species

Presence of special status plant species and their habitats in Doña Ana County was considered using LCDO species occurrence/habitat records and New Mexico Natural Heritage Program species records. Species descriptions and distributions were derived from LCDO office records and New Mexico Rare Plant Technical Council [NMRPTC. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page: <http://nmrareplants.unm.edu> (Latest update: 18 January 2006)]. Based on evaluation of the referenced information, of the 21 rare or special status plant species known to occur in Doña Ana County, one species, night-blooming cereus (*Cereus greggii*), may occur in the proposed action area.

Special Status Animal Species

Special Status animal species lists for Dona Ana County were compiled from: (www.wildlife.state.nm.us/conservation/threatened_endangered_species/index.htm and www.fws.gov/ifw2es/NewMexico/SBC_view.cfm?spcnty=DonaAna). Known geographic distribution and habitat requirements were considered for each species in comparison with habitat types in the Organ Mountains. Of the species listed by the USFWS as species of concern in Dona Ana County, 17 species are considered to have potential habitat within the proposed action area.

Townsend's big-eared bat	BLM Sensitive, USFWS Species of Concern
Spotted bat	State Threatened
Aplomado falcon	Federally Endangered, State Endangered
Common ground dove	State Endangered
Broad-billed hummingbird	State Endangered
Bell's vireo	BLM Sensitive, USFWS Species of Concern
Texas horned lizard	BLM Sensitive, USFWS Species of Concern

Habitat descriptions for these special status wildlife species are available from the BLM LCDO.

3.11 Visual Resources

Most of the lands encompassing the proposed action are inventoried as VRM class IV (figure 4). The objective of VRM class IV is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements (BLM Manual H-8410-1). Approximately 31.2 acres in the southwest portion of the proposed CP are inventoried as VRM class III (figure 4), the objective of which is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate (BLM Manual H-8410-1).

Previous mining activities in the northwest corner of the proposed CP have altered visual conditions by creating highwalls and materials piles and by removing vegetation. Extensive mining on private lands to the northwest of the proposed CP have also locally altered visual conditions.

3.12 Recreation and Sensitive Areas

There are no developed recreational sites within the proposed Community Pit area. The closest developed recreation areas on public land are in the Organ Mountains where camping is available at the Aguirre Spring Recreation Area. Picnicking is available at the Aguirre Spring Recreation Area, at La Cueva Picnic Area and Dripping Springs Natural Area. In general, the Federal land provides a variety of dispersed recreational opportunities such as hiking, nature study, picnicking, primitive camping, target shooting, and vehicle travel on undeveloped roads.

Figure 2 illustrates that the proposed community pit is not located within the boundaries of any current or nominated Area of Critical Environmental Concern (ACEC), Resource Natural Area (RNA), Special Management Areas (SMA) or Wilderness Study Area (WSA) or Wilderness Areas. The closest sensitive area is the Organ Mountain ACEC, which is situated approximately ¼ mile west of the proposed CP.

3.13 Lands and Realty

Review of BLM records indicates no authorized or pending rights-of-way, easements or land exchanges are associated with the subject parcels. The public domain portions of sections 28 and 33 of T. 24 S., R. 3 E. are identified for land ownership adjustment (disposal) in the 1993 Mimbres Resource Management Plan.

4 ENVIRONMENTAL EFFECTS

4.1 Air

4.1.1 Impacts of the Proposed Action on Air

The impact of the proposed action on air quality would be greater production of airborne particulates due to removal of vegetation and the surface disturbance associated with aggregate mining. Airborne dust mobilization would be most likely during the spring and early summer months when dry conditions and high winds favor the mobilization of particulate matter. Increased volumes of airborne dust could affect visibility and locally degrade air quality. Mining equipment could also contribute to air quality degradation through emissions from internal combustion engines. This affect will vary with the extent and intensity of mining activities.

4.1.2 Impacts of the No Action on Air

In the no action alternative, the proposed Community Pit would not be designated and aggregate mining activities on Federal land would not occur. This would decrease the possibility of particulate mobilization during wind events. There could also be slightly lower emissions from diesel equipment. Aggregate mining would likely continue, however, at existing operations on both State and private lands in Mossman Arroyo. Airborne dust and vehicle emissions associated with mining would still be created from these sources, and this pollution would still affect adjacent Federal lands.

Mitigations for Air Resources: The LCDO will require a variety of dust control measures in the stipulations to mineral materials contracts and FUPs. These measures are based on best available control measures (BACM) recommended in the Natural Event Action Plan (NEAP) prepared for Dona Ana County (New Mexico Environmental Department, 2000). BACMs include, but are not limited to, minimizing the area disturbed by mining, watering of roads and support areas, and the application of oversize fraction over disturbed areas to shield exposed surfaces from the wind. For long-term mining proposals, the LCDO could require planting and maintaining vegetation along the perimeter of mining operations to act as wind breaks.

4.2 Cultural and Native American Religious Concerns

4.2.1 Impacts of the Proposed Action on Cultural and Native American Religious Concerns

A systematic cultural resources inventory has been completed for the proposed Mossman Arroyo Community pit area, and a NMCRIS Investigation Abstract Form (NIAF) is being prepared for the New Mexico State Historic Preservation Office (SHPO). Some areas that contain sites that are potentially eligible for the National Register of Historic Places were identified during the field survey. These sites and a 100' (minimum) buffer zone are excluded from the Mossman Arroyo Community Pit area. No traditional cultural properties or Native American religious sites are identified in the area of the proposed action. Future mining activities would therefore only affect isolated occurrences of artifacts.

4.2.2 Impacts of the No Action on Cultural and Native American Religious Concerns

The proposed community pit would not be designated and no further aggregate mining would not occur. There would therefore be no affects to any artifacts or cultural properties

Mitigations for Cultural and Native American Religious Concerns: Because the area of the proposed Community Pit has been surveyed, needed mitigation measures consist of protecting any previously unknown or undiscovered historic or archeological resources. Every permit or contract issued for the Mossman Arroyo CP will be subject to standard archeology stipulations (appendix 1), which outline procedures for avoiding, protecting and reporting previously unknown archeological or cultural resources.

4.3 Water Resources

4.3.1 Impacts of the Proposed Action on Water Resources

Surface waters: Given the local bedrock conditions, aggregate mining will not expose acid-generating materials or soluble minerals which could contribute dissolved metals to surface waters. Aggregate mining will result in the clearing of vegetation and exposure of unconsolidated fluvial sediments, which will be susceptible to erosion which could increase sediment loading into the Rio Grande and its tributary arroyos.

Ground waters: Well drilling, wash plants and other water-intensive activities are not anticipated for the Mossman Arroyo Community pit and are not permitted in the CP Mine plan of Operations (Appendix 1). Depths to the water table (380'+) exceed the possible depth of feasible mining. Therefore, there are no

anticipated affects on the supply and availability of groundwater associated with the proposed action. Fuel leaks, engine fluid leaks and improper fueling procedures could result in soil or groundwater contamination, but total contaminant volumes would be small (< 100 gallons) and affects localized.

4.3.2 Impacts of the No Action on Water Resources

Surface waters: No impacts to surface water associated with aggregate mining on Federal lands are expected in the No Action alternative.

Ground waters: No impacts to groundwater associated with aggregate mining on Federal lands are expected in the No Action alternative.

Mitigations for Water Resources: Mitigation practices defined for currently permitted operators in Mossman Arroyo can be applied to the proposed action. These mitigations are outlined in the CP Operations Plan and stipulations in Appendix 1. These stipulations include:

- Maintaining buffers and riparian vegetation along arroyo channels
- Supplementing vegetative buffers around arroyos with BLM approved seed mix as necessary
- Prohibiting excavation of pit floors below the elevation of arroyo channels
- Installation of erosion control measures (jute blanket, hay bales, mulch, etc.) as required
- Requiring liners under refueling areas and forbidding bulk fuel storage on site.

4.4 Paleontology

4.4.1 Impacts of the Proposed Action on Paleontology

No vertebrate fossil resources are known to exist within the proposed Mossman CP, and no fossil specimens have been uncovered by existing mining operations. However, because vertebrate fossils have been discovered north of the proposed action, it is possible that such fossils do occur within the boundaries of the proposed CP. Aggregate mining by its nature requires movement of large volumes of materials, and fossil specimens could be destroyed or disturbed during this process; resulting in the loss of scientific information. Whether such fossils would consist of isolated fragments or specimens of scientific value is indeterminable with current information.

4.4.2 Impacts of the No Action on Paleontology

If the Mossman CP was not designated and mining on the Federal lands did not continue, no disturbance to any possible fossil resources would be expected.

Mitigations for Paleontology: The potential for occurrence of fossil resources in Mossman Arroyo is unknown at this time. The most practical mitigation measure is therefore avoidance, protection and reporting in the event of discovery of fossil resources. Procedures requiring operators to protect and report fossil resources discovered during or operations are included in standard stipulations for all contracts and permits (appendix 1), and are modeled after similar stipulations for undiscovered archeological and cultural resources.

4.5 Soils

4.5.1 Impacts of the Proposed Action on Soils

Designation of the Community Pit will result in continued and possibly increased aggregate mining. Affects to soils from this activity could include increased potential for erosion and loss of soil productivity. Vehicle traffic could also compact soils resulting in decreased permeability and increased runoff.

4.5.2 Impacts of the No Action on Soils

No affects to soils would be expected in the No Action scenario because no new mining is assumed.

Mitigations for Soils: The primary resource impact of the proposed action on soils will be increased potential for wind erosion. Many of these concerns will be mitigated using the same measures outline to protect air quality (see section 4.1). Soil compaction would have to be mitigated through disk tilling or mechanical ripping during reclamation. Long-term impacts to soils and the loss of soil productivity will be addressed through reclamation activities that will restore soil permeability (tilling), organic matter content (straw and mulch application) and vegetative communities (seeding).

4.6 Range

4.6.1 Impacts of the Proposed Action on Range

Under the proposed action there would be no impacts to livestock grazing due to the small project scale. The grazing permit would remain the same.

4.6.2 Impacts of the No Action on Range

Under the no-action alternative, aggregate mining would not occur on BLM public land and the area would remain under its current state. Livestock grazing would not be impacted under the no-action alternative.

4.7 Vegetation

4.7.1 Impacts of the Proposed Action on Vegetation

The impact of the proposed action on vegetation will be a complete loss of the vegetation, increased weed competition and an increase in airborne particulates due to the surface disturbance associated with aggregate mining. Anywhere within the area that mining took place all vegetation would be removed from the site. Areas within the designation that do not experience aggregate mining would remain in the current vegetation state. Airborne dust from the mining activities could impact the surrounding vegetations' productivity (Farmer, 1993). The increased presence of non-native invasive plants could hinder the re-establishment of native vegetation.

4.7.2 Impacts of the No Action on Vegetation

In the no action alternative, the proposed Community Pit is not designated and the current vegetation state would persist.

Mitigations for Vegetation: The primary resource impact of the proposed action on vegetation will be a complete loss of vegetation, increased dust and invasive plants. The loss of vegetation will be mitigated through reclamation activities including re-seeding of disturbed areas. Mitigations to reduce the spread of

non-native invasive species into the areas that are being recovered will be taken and are outlined in the weed mitigations section (Section 4.8.2). These efforts to reduce the spread of invasive species will aid in native vegetation recovery by reducing non-native plant competition. The LCDO will require a variety of dust control measures in the stipulations to mineral materials contracts and FUPs to reduce the amount of airborne particulate matter. These mitigations are further outlined in Section 4.1.2: Mitigations for Air Resources.

Desirable plant species will be preserved by requiring operators to recover individual specimens for the BLM's plant adoption program. This requirement will be implemented as an enforceable stipulation to each contract and free-use permit.

4.8 Invasive Species and Noxious Weeds

4.8.1 Impacts of the Proposed Action on Invasive Species and Noxious Weeds

Surface disturbing actions risk introducing invasive non-native species into uninfested sites. The establishment and spread of invasive species can adversely affect native species by outcompeting them for resources such as water, space and soil nutrients. Invasive plants could be introduced by unwashed mining equipment or contaminated mulch used during reclamation. The removal of native vegetation during the mining process could facilitate establishment of invasive non-native plants. Furthermore, sand or fill material obtained from areas infested by nonnative and invasive plants could be spread seeds of these plants to areas outside the limits of the proposed Community Pit.

4.8.2 Impacts of the No Action on Invasive Species and Noxious Weeds

If the Mossman Community Pit was not designated and aggregate mining did not continue, there would be a decrease probability of invasive or noxious weed establishment. The No Action alternative is not expected to eliminate this risk, however, because invasive or noxious weeds could be spread by other activities in Mossman Arroyo..

Mitigations for Invasive Species and Noxious Weeds: Mitigating for invasive species and noxious weeds involves protection measures that will prevent contamination of the Community Pit site during equipment mobilization and mining, and provide for treatment in the event an infestation is discovered in the CP area. These mitigation measures will be included as standard stipulations for all contracts and free-use permits (appendix 1). Specific mitigation measures include:

- Requiring that all equipment be cleaned prior to mobilization
- Authorizing BLM inspection of equipment prior to entry on Federal lands
- Monitoring authorized sites for invasive or noxious weed infestation
- Mandatory BLM prescribed treatments in the event of infestation

4.9 Wildlife

4.9.1 Impacts of the Proposed Action on Wildlife

Implementation of the proposed action would permanently alter 340 acres of public land, rendering it unsuitable as habitat for many species of wildlife. Fossorial animals, and animals that nest in vegetation,

would lose this habitat for burrowing, nesting, and hiding. Some species that feed in open areas may use the area for feeding, but those species are few. Vehicle use of the roadway would result in direct impact and mortality to wildlife including reptiles, amphibians, and small mammals, but would not be expected to cause population-level impacts. Wildlife that is resident to the proposed CP area would be displaced as a result of the aggregate production. It is anticipated, however, that ample suitable habitat is present in surrounding areas.

4.9.2 Impacts of the No Action on Wildlife

If the No Action alternative is implemented, the proposed CP area would not be designated and aggregate mining would not continue on Federal land. The loss of habitat expected in the proposed action would not occur. Vehicle use of the roadway in support of aggregate operations on private or state land could still result in some animal mortality.

Mitigations for Wildlife: Will be incorporated into the standard operating plan for the Mossman Arroyo CP (see appendix 1). These mitigation measures focus on protecting wildlife and preventing the take of game animals, and include measures such as limits on operations and fencing of pits if necessary. At the end of mine operations, partial remediation of habitat loss would be achieved through reclamation of mined areas.

4.10 Special Status Species

4.10.1 Impacts of the Proposed Action on Special Status Species

Implementation of the proposed action would be expected to result in direct mortality to any night-blooming cereus plants that occur on the site, but it is unlikely any of these plants are there.

Implementation of the proposed action would not be anticipated to have significant impacts to most of the special status animal species listed in section 3.10, with the exception of the Texas horned lizard. Direct mortality of individual Texas horned lizards would be anticipated to occur occasionally as a result of implementation of the proposed action. Potential nesting habitat could be destroyed for the common ground dove, broad-tailed hummingbird, and Bell's vireo.

4.10.2 Impacts of the No Action on Special Status Species

Under the no-action alternative, the project area would not be designated as a Community Pit and aggregate mining would not continue. The affects of the proposed action alternative would not be anticipated to occur.

Mitigations for Special Status Species: Are largely similar to those described for wildlife in section 4.9, and are incorporated into the standard operating plan for the Mossman Arroyo CP (see appendix 1). At the end of mine operations, partial remediation of habitat loss would be achieved through reclamation of mined areas.

4.11 Visual Resources

4.11.1 Impacts of the Proposed Action on Visual Resources

In this scenario, aggregate mining would alter the form and appearance of the local landscape. Vegetation removal will change the color and appearance of mined areas and the mining process will alter landforms and topographic features. These alterations are presently occurring at existing mineral materials operations throughout Mossman Arroyo (figure 3), but designation of the Community Pit could increase the extent of surface disturbance.

4.11.2 Impacts of the No Action on Visual Resources

Present authorized mining activities within the proposed community pit are limited to the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of section 28, T. 24 S. R. 3 E. Existing visual impacts under the No Action alternative would be limited to this area, but no new visual effects would be anticipated.

Mitigations for Visual Resources: The limits on mining depth to prevent flooding (see section 4.3.2) will limit the extent of topographic alteration. Operators will also be required to stage equipment in pits and avoid painting equipment and facilities in a manner that strongly contrasts with the surrounding landscape (Appendix 1). Long-term, visual impacts will have to be mitigated by reclamation as areas of the community pit are mines out and aggregate production ceases.

4.12 Recreation and Sensitive Areas

4.12.1 Impacts of the Proposed Action on Recreation and Sensitive Areas

There are no sensitive areas or organized recreation sites within the proposed CP. Affects will primarily be to dispersed-recreational activities such as hunting and OHV use. Access to mining areas will generally be limited for safety reason, so recreational activities would be precluded within production areas, but not within undeveloped or inactive areas of the proposed Community Pit. After mine reclamation, the reclaimed areas may need to be closed for a year or more to permit vegetation to become established, which will further reduce opportunities for dispersed recreation.

4.12.2 Impacts of the No Action on Recreation and Sensitive Areas

In this alternative, the Mossman Community Pit would not be designated and aggregate mining would not occur. There would be no impacts to recreation and sensitive areas.

Mitigations for Recreation and Sensitive Areas: Although aggregate production would preclude most dispersed recreation activities within areas being mined, opportunities for dispersed recreation would remain available at surrounding public lands. To mitigate possible safety concerns, the operators will be required to post warning signs and may be required to install access gates and fence sites if necessary to protect public safety. Wire gates would be prohibited to protect OHV users.

4.13 Land and Realty

4.13.1 Impacts of the Proposed Action on Lands and Realty

The proposed action would not affect any active or pending rights-of-way or easements. Because the lands involved are designated for disposal in the 1993 Mimbres RMP, it is possible that that proposed action could result in limitations of the ability of BLM to dispose of lands within the CP boundaries. These limitations would result if a qualified entity was to request an exchange or R&PP lease on lands

included in an active mineral materials contract or permit. Presently, however, there are no applications or inquires to acquire the lands involved in the proposed action.

4.13.2 Impacts of the No Action on Lands and Realty

In the No Action alternative, the Mossman Community Pit would not be designated. There would be no affects to future realty or land disposal actions.

Mitigations for Lands and Realty: The possibility for future requests for land disposals within the proposed CP area cannot be known at this time, but it is not anticipated that there will be significant interest in this area for land exchanges in the near future. Because the planned CP designation will last for a maximum of ten years, the LCDO will be able to reassess the land disposal situation at that time, and decide whether continued authorization of a Community Pit at the Mossman Arroyo site would be consistent with planned land actions or disposals.

4.14 Cumulative Impacts

Cumulative impacts result from the Proposed Action in combination with other, related or unrelated projects or occur indirectly as part of a chain of events related to the initial activity. Such impacts may develop incrementally over time from a series of actions.

Mossman arroyo has historically been a source of aggregate materials for the Las Cruces area. Presently, aggregate mining is occurring at two locations on State of New Mexico land (section 32, T. 24 S. R. 3 E.) and at one location on private land in the arroyo. There is also a five acre BLM Common Use Area (Mesquite CUA) in the unnamed drainage northeast of Mossman Arroyo (figure 3). These mining operations are expected to continue regardless of the final decision on the Mossman Arroyo CP, and will create similar affects as those described in section 4. The impacts of affects such as dust mobilization, habitat loss or sediment erosion could extend beyond jurisdictional boundaries and possibly compound environmental impacts due to mining on Federal lands. Such cumulative impacts will vary depending on the scale and intensity of mining, which will most likely be determined by future demand for aggregate material.

The mitigation measures described in chapter 4 and operational stipulations outlined in appendix 1 will mitigate impacts from aggregate mining on Federal lands. The mitigation of mining impacts on non-federal land is ultimately the responsibility of State and local agencies. Cumulative impacts to the Mossman CP may therefore be determined by the implementation and enforcement of environmental protection measure at mining operations outside of the Federal jurisdiction.

5 TRIBES, INDIVIDUALS, ORGANIZATIONS OR AGENCIES CONSULTED

The public had the opportunity to contact the LCDO and provide input on this project. The project was listed on the New Mexico BLM Website NEPA Log:
http://www.blm.gov/nm/st/en/prog/planning/nepa_logs.html

Prior to posting this EA for the 30 day comment period, courtesy letters were sent to fifteen potentially interested parties informing them that this project is available online and at the LCDO for review and comment..

6 LIST OR PREPARERS

ID Team Member	Title	Organization
Corey Durr	Soil scientist	BLM-LCDO
Oz Gomez	Landscape Architect	BLM - LCDO
Dave Legare	Archeologist	BLM - LCDO
Jennifer Montoya	NEPA Coordinator	BLM-LCDO
Lorraine Salas	Realty Specialist	BLM - LCDO
Joe Sanchez	Recreation Specialist	BLM - LCDO
Ciara Cusack	Range Conservationist	BLM - LCDO
Michael Smith	Geologist	BLM - LCDO
Mark Hakkila	Wildlife Biologist	BLM - LCDO
Chris Teske	HAZMAT Coordinator	BLM - LCDO

7 REFERENCES

Farmer, A.M., 1993. The effects of dust on vegetation- a review: Environmental Pollution. Vol. 79, p. 63-75.

Hawley, J. W., 1984, Hydrogeologic cross sections of the Mesilla bolson area, Dona Ana County New Mexico and El Paso County, Texas: New Mexico Bureau of Mines and Mineral Resources Open File Report 190, Appendices A and C.

Hawley, J. W., and Lozinsky, R. P., 1992, Hydrogeological framework of the Mesilla Basin in New Mexico and Western Texas: New Mexico Bureau of Mines and Mineral Resources Open File Report 323, 95 pages.

Morgan, G. S., Lucas, S. G. and Estep, J. W., 1998, Pliocene (Blancan) vertebrate fossils from the camp Rice formation near Tonuco Mountain, Dona Ana County, southern New Mexico: *in* New Mexico Geological Society Guidebook, 49th Field Conference, Las Cruces Country II p. 237-249.

New Mexico Environmental Department: Air Quality Bureau, 2000, Natural event action plan for high wind events: Dona Ana County. <http://www.nmenv.state.nm.us/aqb/neap/neap-final.pdf>

New Mexico Office of the State Engineer, 2010, Water-rights lookup database: http://www.ose.state.nm.us/waters_db_index.html

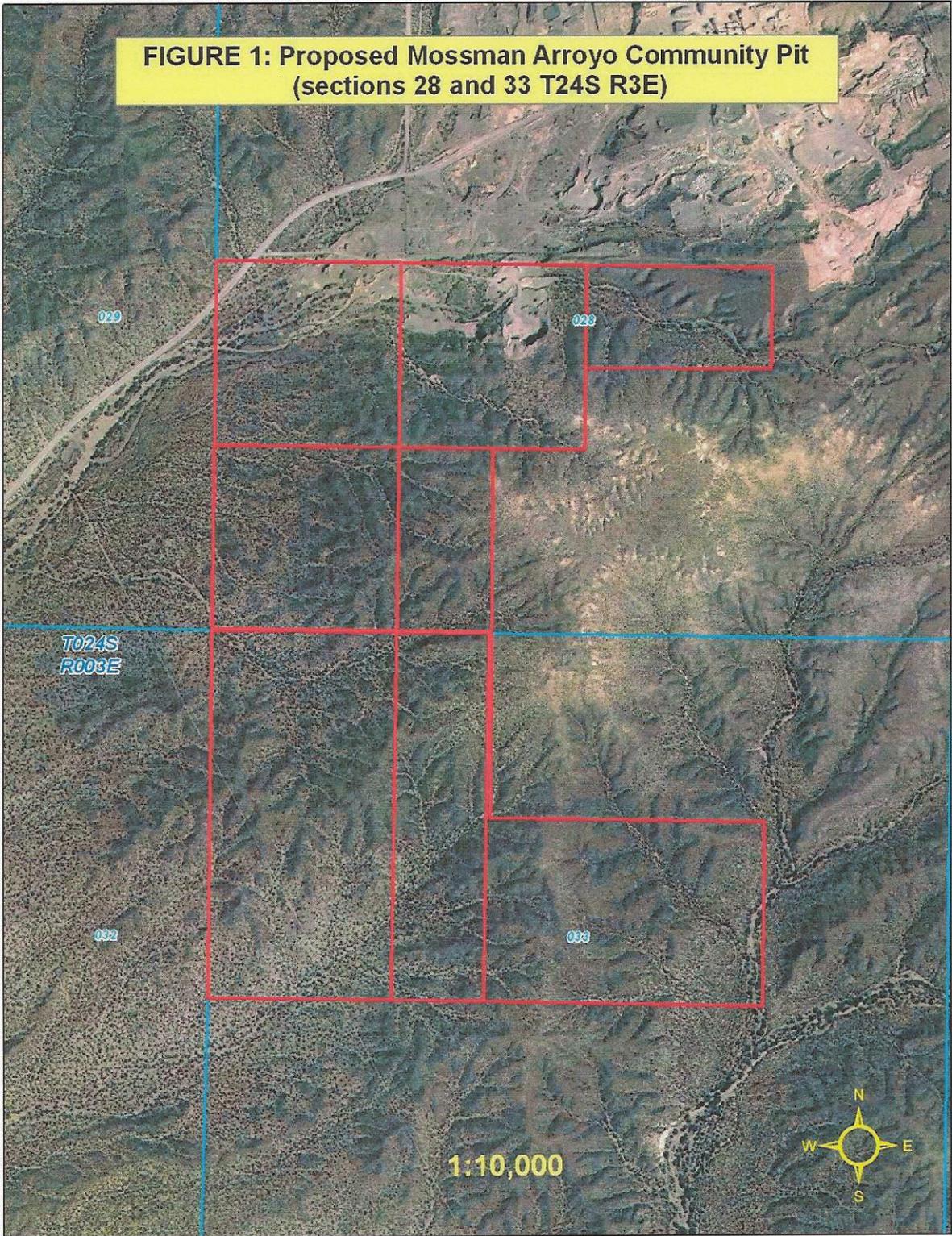
U.S. Bureau of Land Management: BLM VRM Manual 8410-1 – Visual Resource Inventory
<http://www.blm.gov/nstc/VRM/8410.html#Anchor-23240>

U.S. Bureau of Land Management, 2007, Instruction Memorandum No. 2008-009 (Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands)

U.S. Soil Conservation Service, 1980, Soil Survey of Doan Ana County area, New Mexico, 177 p.
(project record entry #008).

Western Regional Climate Center, 2009, <http://www.wrcc.dri.edu/index.html>: monthly data for Jornada Experimental Range, New Mexico; Jun. 1, 1914 to Set, 30, 2010.

**FIGURE 1: Proposed Mossman Arroyo Community Pit
(sections 28 and 33 T24S R3E)**



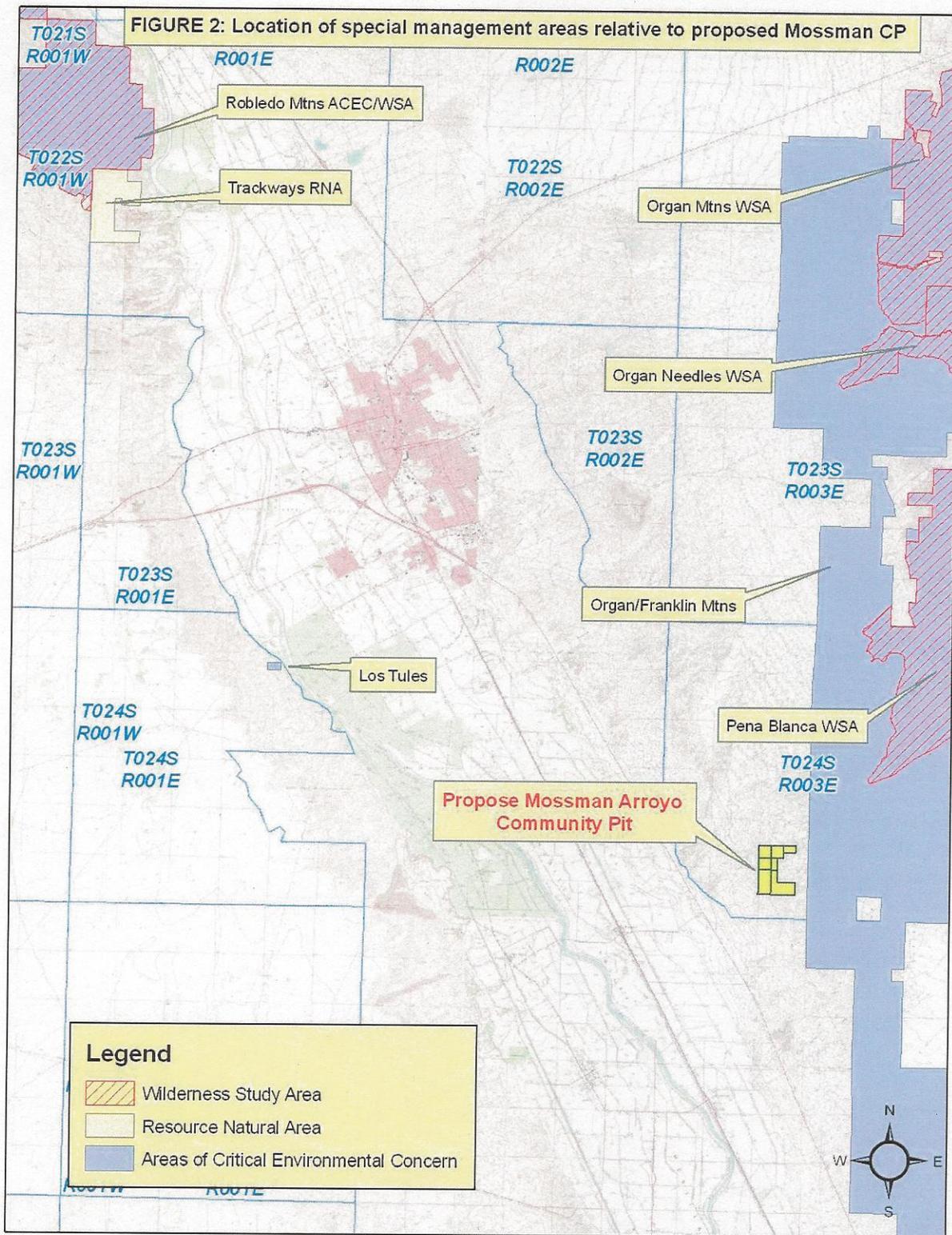


FIGURE 3: Proposed Mossman Community Pit Location Relative to Existing Materials Operations

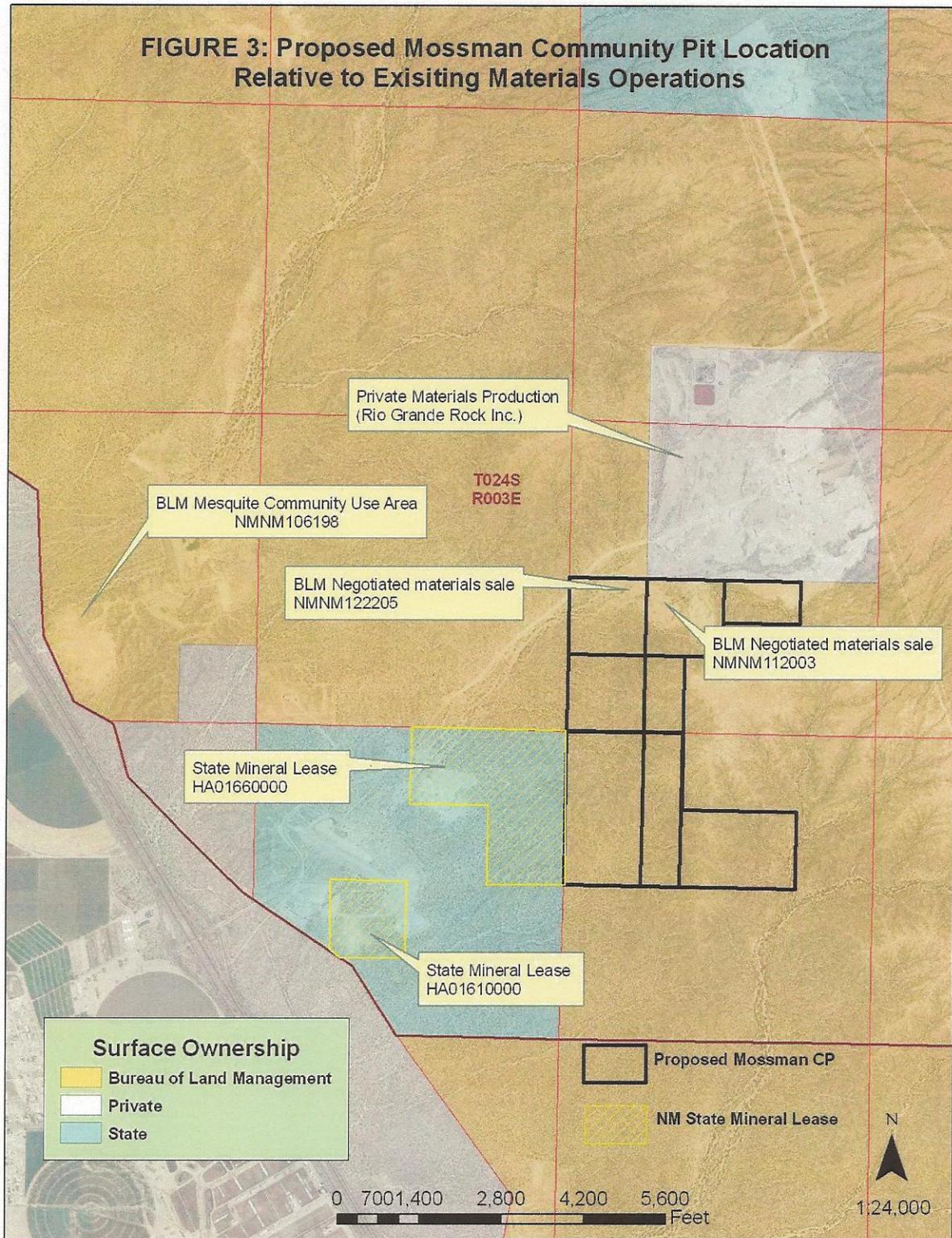
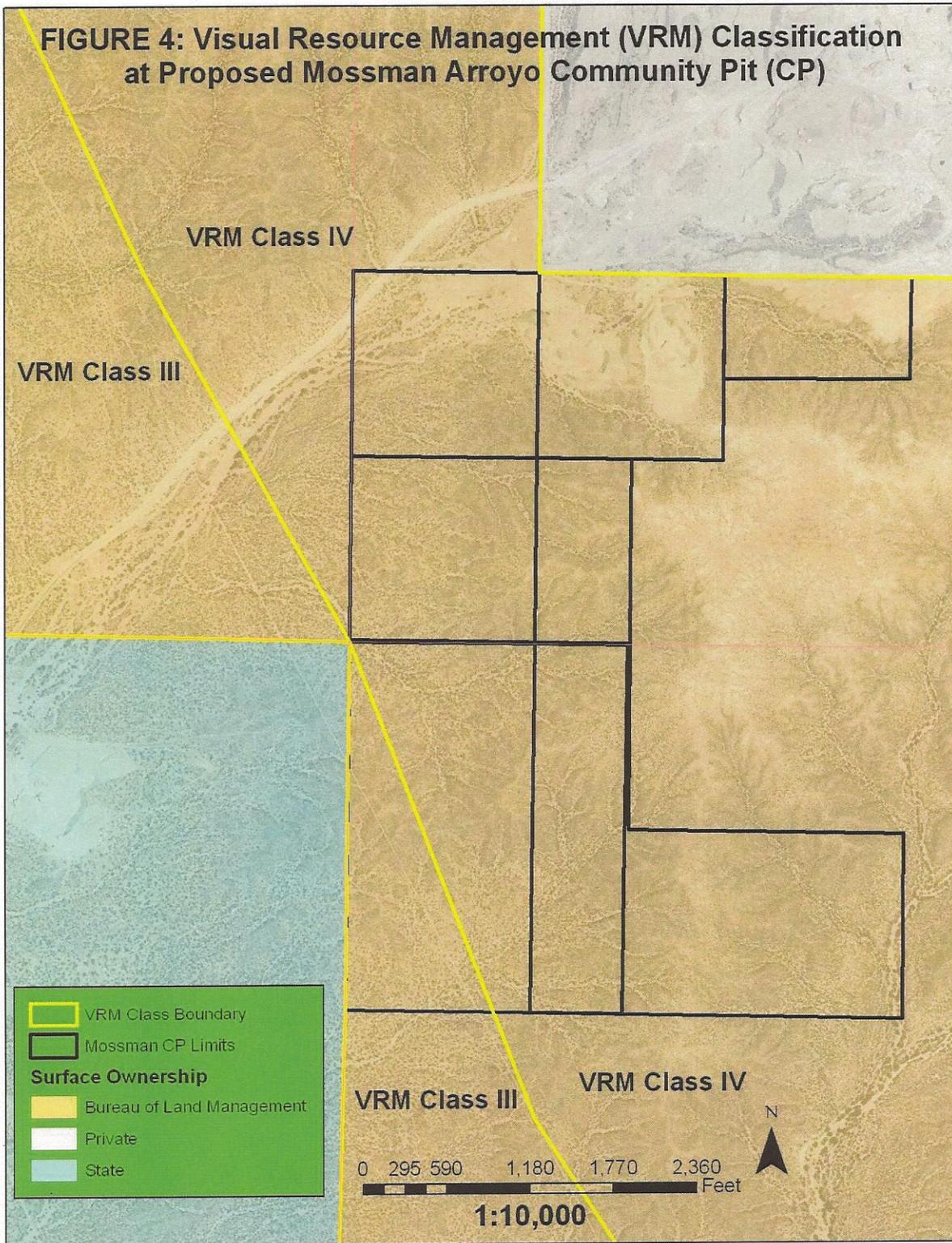


FIGURE 4: Visual Resource Management (VRM) Classification at Proposed Mossman Arroyo Community Pit (CP)



**APPENDIX 1: Resource Protection Measure and Mine Plan of Operations for the Mossman
Arroyo Community Pit (NMNM120786)**

4. RESOURCE PROTECTION MEASURES

- a. **CONTRACTOR NAME**, henceforth referred to as “the contractor”, shall follow all mining and operational procedures, including post-operational reclamation, described in the approved mine plan of operations (MPO), hereafter incorporated into this contract as exhibit “A”.
- b. The contractor shall maintain the improvements and premises to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the BLM. If required by the BLM, the operator shall fence the area of mine operations with a BLM-standard wire fence and the operator shall be responsible for the removal and disposal of that fence.
- c. The contractor shall not damage, move, deface or otherwise disturb any benchmark, boundary marker, section corner, quarter-section corner, meander post, witness tree or any other survey marker or its accessories. The contractor shall assume all responsibility for recognizing and protecting all survey markers in the field and all replacement cost and legal liabilities for any such marker or accessory damaged or destroyed by mining or related operations.
- d. The contractor shall be responsible for the protection from damage of all identified cultural resources within the area which may be affected by their actions. In addition, the contractor shall be liable for all damage or injury to the identified cultural resources caused by their actions. The contractor shall immediately notify the Agency Official if any damage occurs to any cultural resource and immediately halt work in the area in which damage has occurred until approval to proceed has been granted by the Agency Official after consultation with the BLM Archeologist.
- e. If previously undiscovered heritage resources (historic or prehistoric) are exposed or disturbed as a result of operations authorized under this contract, the contractor shall leave such discoveries intact, cease operations in the area so affected, and immediately notify the Las Cruces Field Office. The contractor shall not proceed until they are notified by the BLM in writing that all provisions or recovery of heritage resources are met.
- f. Pursuant to the Native American Grave Protection and Repatriation Act (NAGPRA) 25 USC 3002(d); 43 CFR Part 10.4, if any human remains, funerary objects, sacred objects, or objects of possible cultural significance are discovered during the course of ground disturbing activity, the contractor will immediately cease activity in the area of the discovery and will make a reasonable effort to protect the remains and objects. The contractor will provide immediate telephone notification of the discovery to the Las Cruces Field Office, and will follow up with written confirmation to the authorized officer. The contractor will not resume the activity that resulted in the discovery until the authorized officer gives written approval. Approval to resume the activity, if otherwise lawful, will be given thirty (30) days

after certification by the Agency Official of the contractor's written confirmation of the discovery, or at any time that a written binding agreement is executed between the BLM and the affiliated tribes adopting a recovery plan for the remains and objects.

- g. In the event that fossils or paleontological resources are discovered during the course of operations or during agency inspections, the contractor shall leave such discoveries intact, cease operations in the area so affected, and immediately notify the Las Cruces Field Office. The discovery site shall be protected until LCDO staff can evaluate the discovery and recommend appropriate mitigation measures. If necessary, the discovery site may be marked and permanently removed from the area of operations and contract volume will be accordingly adjusted downward.
- h. Any soils, water or materials contaminated by fuels, lubricants or engine fluids shall be immediately cleaned, isolated in appropriate containers and disposed of at approved waste-receiving facilities. Onsite burial of contaminated soils or sediments is strictly prohibited.
- i. Permanent residence or the employment of resident caretakers or security guards is strictly prohibited. All employees must vacate the site at the end of each shift. Night operations or maintenance is strictly prohibited.
- j. All trash, garbage and other solid wastes will be stored in appropriate receptacles and regularly (once a week minimum) disposed at a County approved waste disposal facility. Disposing of any solid waste, concrete, hazardous materials, petroleum products, pollutants or other foreign substances on site is strictly prohibited. This prohibition shall extend to the burning of solid wastes, chemicals or petroleum-product wastes.
- k. The contractor shall meet all Federal, State of New Mexico, and local standards for air quality and take necessary measures for dust control as approved by the Authorized Official.
- l. The contractor shall be responsible for the prevention and control of soil erosion, stormwater runoff and slope stabilization on Government lands covered by this contract, and lands adjacent thereto, where such erosion has resulted from construction or maintenance of this project, and shall do such re-vegetation and construction and maintenance of preventative works prescribed by the BLM as will accomplish this result.
- m. The contractor shall, as instructed by the BLM, implement best available control measures (BACMs) to control dust mobilizations. These BCAMs may include, but are not limited to, watering of roads and mining areas, the application of BLM-approved dust control agents such as calcium chloride, and the planting and maintaining vegetation along the perimeter of mining operations to act as wind breaks.

- n. The contractor shall comply with all applicable Federal, State and County fire laws, regulations and ordinances and will take all reasonable measures to prevent and suppress fires in the area of operation and will require their employees and subcontractors to do likewise.
- o. The contractor shall not damage nor obstruct any range improvements. Range improvements damaged by operations shall be fully repaired at the contractor's expense in no fewer than 15 calendar days.
- p. All equipment shall be kept in safe operating order and free of any oil, fuel or fluid leaks. Staging or storing inoperable or broken equipment on site is prohibited. The contractor shall not store or stage any equipment, regardless of operating status, which is not being used for approved contract operations.
- q. To prevent the spread of noxious weeds, the contractor shall clean all earth-moving and hauling equipment prior to its initial move-in to the area. If any equipment subsequently operates outside this project area, it shall be treated the same as an initial move-in. This cleaning shall remove all soil, seeds, vegetative matter, or other debris that could contain or hold seeds or plant parts. The LCDO shall reserve the right to inspect equipment prior to entry or staging on BLM lands. The contractor shall employ power-wash or high pressure cleaning or whatever cleaning methods are necessary to ensure that equipment is free of noxious weed sources. Equipment shall be considered free of soil, seed and plant debris when a visual inspection does not detect such material.
- r. Should invasive, nonnative or noxious weeds be discovered within the operator's area prior to or after contract approval, the infested area shall be flagged and undisturbed until a BLM treatment approved treatment regime is developed and implemented.
- s. The designated operating area shall be surveyed to locate, inventory and record desirable plant species prior to disturbance. The desirable plant species include: ocotillo (*Fouquieria splendens*), hedgehog cactus *Echinocereus engelmanni* and barrel cactus (*Ferocactus wislizenii*). These surveys will be completed with the assistance of BLM personnel if requested. Any living desirable plants found will be salvaged so the BLM may adopt them out to interested parties. The contractor will be responsible for removing the plants undamaged and with their root wad in-tact. The operator will contact LCDO at least two (2) weeks prior to removing the plants to allow BLM sufficient time to notify interested parties of the upcoming plant adoption. The plants will be left on site in a safe and accessible area to be collected by the LCDO or its designated agents.

**EXHIBIT A: MINE PLAN OF OPERATION: MOSSMAN ARROY COMMUNITY PIT
OPERATOR INFORMATION**

BLM Serial Number: _____

Total Volume: _____

Contractor Name: _____

Operator Name: _____

Address: _____

Address: _____

Telephone: _____

Telephone: _____

Legal description of Area to be Mined: _____

(See also attached map showing the area to be mined.)

1. **List all equipment proposed for use during the operation for production, processing and reclamation. Include descriptions (make and model) of all equipment. Final equipment inventory is subject to BLM approval. Attach additional page(s) if necessary:**

2. **List all support facilities (gates, storage sheds, water tanks, sanitary facilities, etc.) necessary for operations. Fuel tanks and bulk fuel storage shall not be allowed Final facilities inventory is subject to BLM approval. Attach additional page(s) if necessary:**

DESCRIPTION OF THE OPERATION

1. **Access:** Along the existing BLM road to County road and the I-10 interchange at Mesquite. Additional access roads from the existing BLM road may be necessary to access undeveloped sections of the CP area. Any new roads would be staked on the ground and recorded using GPS by the BLM, and would be built to BLM single-lane, all weather standards. Maintenance of new roads would consist of occasional grading and filling of ruts or washouts by the operators.

2. **Site Preparation:** Prior to initiating operations, the operator shall designate the operations area and any new access roads in the field with BLM personal and shall assume all responsibility for maintaining operational area boundary markers. The operator shall only designate the minimum area necessary to complete contract/permit terms and conditions. The operator shall also designate the locations of the equipment staging area(s), grizzly unit, and screening plant. BLM will record these locations using GPS and will attach a map of the operations area to the final contract. Soil and vegetation may be cleared using dozer or other appropriate equipment as needed. Available topsoil and vegetation will be stockpiled for reclamation within the designated operations area.

3. **Production:** The operator will provide a list of all production equipment to the LCDO and update this list as necessary. Each operator shall be limited to two pieces of production and operational equipment not to exceed 70,000 lbs GVW. Equipment can include wheeled backhoe loaders, wheeled front-end loaders, tracked loaders, tracked excavators and tracked dozer/rippers. Other types of equipment may be permitted if the operator can demonstrate material need related to the fulfillment of contract obligations.

Sand and gravel will be stripped or block-caved from the existing grade using wheeled front-end loader or backhoe-loader. If caliche is encountered, it shall be ripped or mechanically broken and hauled to the stockpile area. The use of explosives is strictly prohibited. Materials may be transported to the processing facility or stockpile site by the production equipment or by dump truck. Working faces shall be benched a minimum of 8' for each 10' of working face height, or sloped to a maximum 2:1.

Prior to initiating operations, the operator shall submit a production verification plan for review and approval by the LCDO. Acceptable verification strategies include, but are not limited to, installing vehicle scales and scheduling pre-and post-mining topographic surveys.

4. **Processing:** The operator will provide a list of all processing equipment to be used on site, and shall provide a diagram of the processing circuit. Operator may install one to three grizzly units to remove large cobbles and boulders from the production stream. A portable vibratory screen unit may be emplaced on site to sort material. One or more conveyor units will be allowed to stack oversized materials. Equipment requiring concrete footing, foundations or other permanent installations is prohibited. Stockpile areas for waste fractions will be located within the designated operating area. All equipment must be necessary and required for regular mining operations. Equipment used on an irregular or infrequent basis shall not be permanently staged on site, but rather bought on-site on an as-needed basis.

5. **Portable structures or facilities:** Are limited to approved sanitary facility (portable toilet) provided by a licensed vendor and a maximum of two portable sheds, each not exceeding a 250 ft² footprint, for

storing tools and spare parts. The operator shall provide a complete list of onsite facilities and equipment. Changes to listed onsite facilities and equipment shall be submitted in writing as a revised list and will be subject to BLM approval. A maximum of two mobile water tanks not exceeding 2,000 gallons will be permitted if included on the equipment list.

ENVIRONMENTAL PROTECTION MEASURES

1. **Air Quality Protection:** The operator shall take measures to control fugitive dust (e.g. wet suppression, enclosures, etc.) at all material transfer points, stockpiles and throughout the facility. All powered equipment shall meet applicable emissions standards and maintained in optimal working order. The operator shall contact New Mexico Environmental Department and comply with all applicable State air quality permitting requirements.

2. **Water Quality Protection:** The operator shall delineate a 50' buffer around the Mossman arroyo channels and will not stage equipment or stockpile materials in this buffer. Existing vegetation shall be maintained in this buffer area, and additional seeding of the buffer zone using a BLM-approved seed mix will be required on an as-needed basis. The operator may be required to construct silt fencing, earthen berms, or other erosion control measures along the arroyo banks as necessary. Excavation will not extend more than 2 feet above the bottom Mossman Arroyo channel.

3. **Solid Wastes:** All trash, litter and discarded equipment parts shall be stored in an approved waste receptacle and disposed at a County transfer station at least weekly. The dumping of construction wastes is prohibited, and any construction waste dumped by visiting haul trucks shall be cleaned and disposed at a County transfer station at the operator's expense.

Outsized material from processing operations shall be banked in stable stockpiles within the designated operating area. This material will be spread within the operating area during Community Pit reclamation. To reduce the volume of processing wastes, the BLM shall reserve the option to dispose of any such material not purchased by the operator under free-use permits if BLM determines such disposal is in the public interest.

4. **Visual Resources:** The operator shall stage equipment and facilities within existing pit floors to minimize visibility from outside the area of operations. The operator shall avoid painting equipment and facilities to contrast with the surrounding landscape unless safety requirements dictate otherwise.

5. **Wildlife Protection:** If project activities and the presence of wildlife create a situation which may result in take of wildlife (i.e. injury or death of animals), such activities shall cease until the wildlife moves, or is moved, out of harm's way. If persistent wildlife interference with operations occurs, the operator shall fence the operations area to BLM standards upon receiving authorization from the Las Cruces District Office. All food wastes shall be kept in animal proof trash containers and disposed at a County transfer station on a regular (at least weekly) basis.

6. Cultural Resources: The General Disposal Area has been previously surveyed for cultural resources by the BLM. The operator shall abide by contract stipulations 4 c-e to protect any previously undiscovered archeological, historic or cultural resources.

7. Hazardous Materials and Wastes: Onsite bulk storing of fuel, engine fluids or other chemicals is prohibited. Soils contaminated by spilled or leaked fuel shall be removed and disposed at an approved hazardous materials disposal site. Onsite burial of contaminated soil is prohibited. If powered equipment (vibrating screen, crusher, etc.) is to be used, the fuel tank and refueling area will be underlain with an impermeable plastic (HDPE) liner secured into the ground and buried with 2" of clean sand.

Any release (leaks, spills, etc.) of fuel or other toxic substances in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required under the Section 102b of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. A copy of any report required or requested by any Federal or State agency as a result of a reportable release of fuel or other toxic substances shall be furnished to the BLM authorized officer concurrent with the filing of the reports to the involved Federal or State agency.

8. Reclamation/Post Operations: Operator shall remove all equipment, trash, facilities and personal property from the public lands and rights of way. Any gates, animal-control fences or erosion control measures (silt fence, check-dams, etc.) installed by the operator shall be removed unless the BLM decides to retain them.

The operator shall either pay a per-unit reclamation fee of 50¢ per cubic yard (37¢ per ton) or shall agree to complete reclamation at the end of operations. Operators who opt to complete post-mining reclamation shall submit a reclamation bond meeting all relevant requirements of 43 CFR §3602.14. Reclamation of mined areas will include the following:

- Reducing highwalls to a maximum 3:1 slope.
- Terracing or benching reclaimed highwalls for runoff control
- Removal or disposal of screen waste fractions
- Scarify or disk-tilling disturbed areas prior to seeding.
- Seeding with a BLM-formulated seed mix (exhibit "B").
- Application of weed-free straw mulch (2 tons/acre)
- Removal and disposal of all equipment, trash and debris.
- Other reclamation measures determined by BLM to be necessary

APPENDIX 2: Seed mix for reclamation of Mossman Arroyo Community Pit (NMNM120786)

**Contract Exhibit "B": Mossman Arroyo Seed Mix
T24S, R3E sec. 28 (Gravelly Ecological Site)**

Re-seeding will be accomplished in June or July to coincide with the "rainy" season. Drill seeding is recommended, but broadcasting seed will be accepted. Broadcast seed will be covered by raking, dragging, or other practical means. Hydro-seeding or other established means of broadcast seeding will be acceptable with approval of the Authorized Officer.

Mulching

Mulching will be required on all seeding projects. Acceptable mulches include:

- 1) Straw or native hay (Certified weed free) (2 tons/ac)(kg/ha)
- 2) Wood residues (2 tons/ac)(kg/ha)
- 3) Hydro-mulching (1,500 lb/ac)(kg/ha)

Straw, hay and wood residue mulch shall be applied on surface following re-seeding. Rotted or moldy hay or straw will not be accepted.

Application

The following are species to be re-seeded and application rates of each. Application rates are shown as pounds of pure-live-seed per acre. Species substitutions and deviations to application rates must be approved by an Authorized Officer. When broadcast, seed application rates are double those shown below.

<u>Species</u>	<u>@Application Rate Lbs./AC</u>
Mesa dropseed (<i>Sporobolus flexuosus</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	0.5
Desert globemallow (<i>Sphaeralcea ambigua</i>)	1.0
Fourwing saltbush (<i>Atriplex canescens</i>)	8.0
<hr/> Total- lbs certified weed-free seed	<hr/> 10.0

@-Seed application rates are doubled if broadcast.