

ENVIRONMENTAL ASSESSMENT  
No. DOI-BLM-AZ-C010-2011-0025-EA

Mohave County Public Works  
Free Use Permit  
Patterson Slope Gravel Pit

United States Department of the Interior  
Bureau of Land Management  
2755 Mission Boulevard  
Kingman, Arizona 86401

October 31, 2011

# TABLE OF CONTENTS

- 1.0 INTRODUCTION**
  - 1.1 PURPOSE AND NEED FOR PROPOSED ACTION
  - 1.2 CONFORMANCE WITH LAND USE PLANS
  - 1.3 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS
  
- 2.0 PROPOSED ACTION AND ALTERNATIVES**
  - 2.1 PROPOSED ACTION
  - 2.2 NO ACTION ALTERNATIVE
  
- 3.0 AFFECTED ENVIRONMENT**
  - 3.1 MINERAL RESOURCES
  - 3.2 BIOLOGICAL RESOURCES
  - 3.3 AIR QUALITY
  - 3.4 RANGE MANAGEMENT
  - 3.5 VISUAL RESOURCES
  - 3.6 CULTURAL RESOURCES
  
- 4.0 ENVIRONMENTAL IMPACTS**
  - 4.1 MINERAL RESOURCES
  - 4.2 BIOLOGICAL RESOURCES
  - 4.3 AIR QUALITY
  - 4.4 RANGE MANAGEMENT
  - 4.5 VISUAL RESOURCES
  - 4.6 CULTURAL RESOURCES
  - 4.7 CUMULATIVE IMPACTS
  - 4.8 RESIDUAL IMPACTS
  
- 5.0 MITIGATION**
  - 5.1 MINERAL RESOURCES
  - 5.2 BIOLOGICAL RESOURCES
  - 5.3 AIR QUALITY
  - 5.4 RANGE MANAGEMENT
  - 5.5 VISUAL RESOURCES
  - 5.6 CULTURAL RESOURCES
  
- 6.0 CONSULTATION AND COORDINATION**
  
- 7.0 BIBLIOGRAPHY**

## 1.0 INTRODUCTION

### 1.1 PURPOSE AND NEED FOR PROPOSED ACTION

This proposal will allow Mohave Public Works Department to extract sand and gravel from public land near Meadview, Mohave County, Arizona. This gravel pit is needed as a source of aggregate for repair and maintenance of public works infrastructure, including roads. This gravel pit is located adjacent to Pierce Ferry Road near Antares Road, Gregg's Hideout Road and Stockton Hill Road to facilitate rapid and inexpensive transport of material to work sites.

### 1.2 CONFORMANCE WITH LAND USE PLANS

The proposed action is in conformance with the Kingman Resource Area Resource Management Plan approved March 7, 1995. The area is open to mineral material disposal. The area is designated visual resource management (VRM) Class II and III.

### 1.3 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

The proposed action is currently or will be in conformance with all applicable statutes and regulations prior to construction. The laws, regulations, guidelines, and ordinances that apply to the proposed action include, but are not limited to, the following:

- National Environmental Policy Act of 1969, as amended
- Endangered Species Act of 1973, as amended
- Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977
- Safe Drinking Water Act, as amended
- National Historic Preservation Act of 1966, as amended
- Clean Air Act, as amended
- Resource Conservation and Recovery Act of 1986
- Native American Graves Protection and Repatriation Act of 1990
- American Indian Religious Freedom Act of 1978
- Archaeological Resources Protection Act of 1979
- BLM Environmental Handbook (H- 1790-1)
- Arizona Native Plant Law

## 2.0 PROPOSED ACTION AND ALTERNATIVES

### 2.1 PROPOSED ACTION

This proposal is to allow extraction of sand and gravel from Section 4, Township 28 North, Range 17 West, Gila and Salt River Meridian (Latitude 35° 50' 47" North, Longitude 114° 5' 52" West); located on public lands approximately ten miles south of the town of Meadview, Mohave County, Arizona (See attached mining plan for details.). On-site production of cold-mix asphalt would also be authorized. . These are authorized activities for designated Free Use Permit sites, as described in the BLM Mineral Materials Disposal Handbook (H-3600-1), Chapter II, Part D, which states:

### 2.1 PROPOSED ACTION (continued)

“Subject to Sec. 3601.21, the purchaser or permittee may use and occupy the site to the extent necessary for fulfillment of the contract or permit. These uses include mining, crushing, washing, screening, separating and stockpiling the material. Generally temporary and occasionally permanent structures such as scales, concrete or asphalt mix plants and guard house/site office are part of aggregate operations. Value-added products such as the asphalt, concrete or ready mix concrete could be considered separate from mining and processing operations and BLM could require a separate authorization such as a special use permit outside of the permit area. However, when possible, the site (generally already disturbed by mining) may be beneficial to the public from an environmental point of view. Contemplated use of concrete or asphalt mix plants, and construction of any permanent structures, such as a guard house, should be included in the mining plan and considered in the analysis under the NEPA during the BLM’s permitting process. Approval may also be obtained from the BLM under Sec.3601.44 as a request for the modification of an approved plan.”

## 2.2 NO-ACTION ALTERNATIVE

The no-action alternative consists of not authorizing the gravel pit and production of cold-mix asphalt..

## 2.3 OTHER ALTERNATIVE

Another alternative would be to relocate the gravel pit. This would destroy more resources while not providing any additional benefit to Mohave County Public Works. Reclamation of the existing disturbance would have to be completed before the existing gravel pit is depleted.

# 3.0 AFFECTED ENVIRONMENT

## 3.1 MINERAL RESOURCES

The Patterson Slope Gravel Pit has been developed in Quaternary sand, gravel and conglomerate.

The slope has a four-percent grade to the west and the Colorado River. The alluvium consists of grain-sizes ranging from sand to cobbles eroded from pre-Cambrian igneous and metamorphic basement rock (meta-granite, gneiss and schist), overlying Tertiary volcanic extrusives (basalt, andesite, latite, trachyte, and tuffs) and intrusives (granite porphyry and rhyolite).

The soil map unit that covers the gravel pit site is 29-Chuckwalla-Riverbend complex, 2 to 15 percent slopes. This site occurs on fan terraces at an elevation of 3,575 feet with a mean annual precipitation of 3 to 6 inches. This map unit consists of 65 percent Chuckwalla and similar soils, and Riverbend and similar soils. Minor components (inclusions) are 10 percent.

The Chuckwalla soil is classified as a Loamy-skeletal, mixed, superactive, hyperthermic Typic Calciargid. This soil is derived from mixed rock sources. Surface rock fragments are about 15 percent cobbles, and 75 percent gravel. This soil is well drained, with moderate permeability 3.1

## 3.1 MINERAL RESOURCES (continued)

(0.6 to 2.0 in/hr). Available water holding capacity is 3.4 total inches. Shrink swell potential is low. Flooding hazard is none. Runoff class is medium. Ecological Site assignment is Limy Upland 3-6" p.z. Deep (RO30ZA109AZ)

Typical profile

E - 0 to 1 inches; extremely gravelly silt loam

Btz - 1 to 5 inches; gravelly loam

Btkz- 5 to 20 inches; very gravelly loam

3.1 MINERAL RESOURCES (continued)

Ck1 - 20 to 29 inches; extremely gravelly loamy sand

Ck2 - 29 to 34 inches; extremely gravelly loamy sandy loam

Ck3 - 34 to 60 inches; very gravelly loamy sand

The Riverbend soil is classified as a sandy-skeletal, mixed, hyperthermic Typic Haplocalcid. This soil is derived from mixed rock sources. Surface rock fragments are about 25 percent cobbles and about 25 percent gravel. This soil is excessively drained, with rapid permeability (6.0 to 20 in/hr.) Available water holding capacity is 2.6 total inches. Shrink swell potential is low. Flooding hazard is none. Runoff class is low. Ecological Site assignment is Limy Upland 3-6" p.z. Deep (RO30ZA109AZ)

Typical profile

A - 0 to 2 inches; very cobbly sandy loam

Bw - 2 to 7 inches; very gravelly sandy loam

Bk1- 7 to 18 inches; very cobbly loamy sand

Bk2- 18 to 34 inches; very gravelly loamy sand

Bk3 - 34 to 60 inches; very gravelly sand

### 3.2 BIOLOGICAL RESOURCES

Vegetation

The dominant vegetation around the gravel pit consists of creosote and white bursage. The area receives 3 to 6 inches of rain a year. Vegetation is sparse and may remain dormant for much of the year. Existing plants may only reproduce on years with above average rainfall and seeds may remain in the soil for years before there is sufficient moisture to induce germination.

Wildlife typically found in this area includes black-throated sparrows, thrashers, rattlesnakes, lizards and small mammals. Food resources are typically scarce and wildlife densities are low in most areas but may be much higher near or in washes.

Threatened and Endangered Species

There are no known threatened or endangered plants or animals that occur in the project area. The Sonoran Desert tortoise a candidate species does occur within the area and the area encompassed by the gravel pit is categorized as category 2 and 3 habitat. Approximately 7 acres of the project area are classified as category 2 habitat and the remaining 33 acres are classified as category 3 habitat. Category 2 tortoise habitat is habitat that may be essential to the maintenance of viable populations and the management goal for this habitat is to maintain stable viable

3.2 BIOLOGICAL RESOURCES (continued)

populations and halt further declines in tortoise habitat values. Category 3 tortoise habitat is

habitat that is not essential to the maintenance of viable populations but the goal is still to limit population declines to the extent possible.

### 3.3 AIR QUALITY

Air quality is affected by climatic conditions which are characterized by hot, windy summers and moderate, moist winters. Precipitation occurs as high-intensity thunderstorms during the summer "monsoon" season (July/August) and by periods of light rain during the later winter months (January/February/March). Snowfall is rare. Average annual precipitation is less than five inches. Under the National Ambient Air Quality Standards, most Kingman Field Office administered lands are rated Class II.

Air emissions at the site will include fugitive particulate emissions from excavation and truck traffic activities and tailpipe emissions (oxides of nitrogen, carbon monoxide, sulfur dioxide, and PM10). These emissions will be authorized under the air quality control general permit for crushing/screening plants operating within Arizona issued by the Arizona Department of Environmental Quality.

### 3.4 RANGE MANAGEMENT

This area is not allotted for grazing.

### 3.5 VISUAL RESOURCES

The proposed project site lies within Visual Resource Management Class IV. This classification allows management activities which require major modification of existing landscape character. The level of change to landscape character may be high, and management activities may dominate the view. The existing landscape is composed moderately-sloping terrain with scrub and bushes. Typical viewers would be motorists traversing Boundary Cone Road immediately south of the pit.

### 3.6 CULTURAL RESOURCES

The proposed project site lies within a greater area with a high concentration of cultural sites. These sites include prehistoric trails, rock art, shrines and artifact scatters. Surveys were conducted of the project area by BLM in 1985. These inventories yielded nothing of cultural significance.

## 4.0 ENVIRONMENTAL IMPACTS

The following critical elements have been analyzed and would not be affected:

- Areas of Critical Environmental Concern
- Prime or unique farmlands
- Floodplains
- Threatened and Endangered Species
- Water Resources

## 4.0 ENVIRONMENTAL IMPACTS (continued)

- Wetlands/Riparian zones
- Wilderness
- Invasive Weeds
- Areas of Critical Environmental Concern
- Wild and Scenic Rivers
- Environmental Justice
- Cultural Resources

#### 4.1 MINERAL RESOURCES

Adverse impacts to mineral resources include the excavation of sand and gravel from forty acres. Final pit floor elevation will reach a depth of no more than thirty feet below surrounding undisturbed terrain. This amount of sand and gravel to be taken is insignificant when compared to the vast potential reserves in the area.

#### 4.2 BIOLOGICAL RESOURCES

Thirty acres of vegetation have already been removed from the project area. Over the life of the project an additional ten acres would be cleared of vegetation. Wildlife species were likely forced into the surrounding areas when the clearing occurred. Some individuals were likely destroyed. The cleared area is not likely suitable habitat for any wildlife species, but after the extraction is completed and the site is allowed to re-vegetate, it would become suitable habitat again. This process could take many (ten or more) years to reclaim after the project is complete. Compensation for tortoise habitat would be required to offset the loss of existing habitat. Compensation would be calculated for the ten acres of proposed, new disturbance. Compensation would be required in the form of land with equal or better tortoise habitat. Compensation required for 10 acres in Mohave County:  $\$348/\text{ac} \times 1.421 = \$494.51 \times 10 \text{ Acres} =$  Total fee **\$4,945.10**.

#### 4.3 AIR QUALITY

The proposed project would result in a small increase in short-term air emissions including fugitive particulate emissions from excavation and truck traffic and tailpipe emissions (nitrogen oxides, carbon monoxide, sulfur dioxide, and particulate matter (PM10)). Periodic episodes of cold-mix asphalt would emit volatile organic compounds for short periods of time. The ever-present wind would quickly dissipate these fumes, minimizing any hazardous exposure to flora and fauna.

#### 4.4 RANGE MANAGEMENT

The gravel pit will have no adverse impact to livestock management or grazing administration because this land is not suitable nor authorized for grazing.

### 4.0 ENVIRONMENTAL IMPACTS (continued)

#### 4.5 VISUAL RESOURCES

The proposed action will be consistent with VRM Class IV objectives. Lands categorized as VRM Class IV may be the subject of major landscape modification. Revegetation will be effected by nature, because of sparse rainfall and difficulty in successful seed germination. After re-vegetation, the residual disturbance will be a square, forty acre depression, twenty to thirty feet deep, in the alluvial surface.

#### 4.6 CULTURAL RESOURCES

The proposed action would have no effect on significant cultural resources as none were identified within the confines of the proposed project site.

#### 4.7 CUMULATIVE IMPACTS

The scope of the project may eventually include up to forty acres, as proposed in the mining plan. At present, disturbance caused by past gravel mining and cold-mix asphalt manufacturing measures about thirty acres. Over the life of the mine at this location, the type of impacts would remain the same, but the increasing area of disturbance would result in the potential increase in the magnitude of adverse impacts. For example: As the affected area increases, more plant and wildlife habitat would be destroyed, more fugitive dust could be generated, the disturbance would be visible from a greater distance, and so forth. Cumulative impacts could be reduced by requiring reclamation of depleted areas of the gravel pit to be reclaimed concurrently with on-going excavation.

#### 4.8 RESIDUAL IMPACTS

Residual impacts will be the loss of mineral material from this site, the long term alteration of up to forty acres of plant and animal habitat, and the permanent alteration of the landscape which will remain after the operation is complete and reclaimed.

### 5.0 MITIGATION

#### 5.1 MINERAL RESOURCES

Reclamation of the affected area will commence when it has been depleted of mineral and a new area of mining has been begun. Final reclamation will commence within thirty days of the permanent end of mining. All faces and slopes within the affected area will be graded to a slope no steeper than one vertical on two horizontal to minimize erosion. When final contours are achieved, they will be scarified in preparation for natural re-vegetation. The surface will be left with a hummocky texture to promote micro-climates conducive to the entrapment and germination of native seeds from plants on adjacent undisturbed land.

### 5.0 MITIGATION (continued)

#### 5.2 BIOLOGICAL RESOURCES

The long term alteration of plant and animal habitat is expected but unavoidable. The

procedures proposed in reclamation provide an environment to accelerate the succession back to the habitat that exists at present. Prior to any new disturbance any state harvest protected plant species would be transplanted to outside of the disturbed areas.

When final contours are achieved, they will be scarified in preparation for natural re-vegetation. The surface will be left with a hummocky texture to promote micro-climates conducive to entrapment and germination of native seeds. Site would be seeded with native seeds appropriate to the precipitation zone of the project area in increase the chances of re-vegetation.

### 5.3 AIR QUALITY

The increase in tailpipe emissions caused by the loader and haul trucks cannot be mitigated. Fugitive dust will be suppressed as required by Arizona Department of Environmental Quality regulations by frequent application of water to haul roads. Episodes of cold-mix asphalt production will cause the release of volatile organic compounds, however these releases will be no greater than those caused by highway construction and maintenance. The site is remote enough to allow the dissipation of these fumes to a level which would be undetectable to passing motorists on Boundary Cone Road and the nearest residential developments.

### 5.4 RANGE MANAGEMENT

This area is not allotted for grazing. Therefore, mitigation of the disturbance will not affect range management.

### 5.5 VISUAL RESOURCES

Visual resource mitigation would include keeping stockpiles and any structures at minimum height.

### 5.6 CULTURAL RESOURCES

Cultural resources were not discovered within the proposed project area, however, being that the area is recognized as being part of a larger cultural landscape, reclamation of the site to promote the return of natural vegetation would be imperative.

## 6.0 CONSULTATION AND COORDINATION

This project was reviewed under the National Environmental Policy Act by Kingman Field Office staff in March, 2011. Those contributing to the environmental review process include:

Dave Brock, BLM Range Conservation Specialist/ Planning and Environmental Specialist

Paul Hobbs, BLM Soil Scientist

Len Marceau, BLM Outdoor Recreation Planner

Paul Misiaszek, BLM Geologist

Jackie Neckels, BLM Assistant Field Manager - Non-Renewable Resources

Tim Watkins, BLM Archaeologist

Andy Whitefield, Environmental Protection Specialis

Ammon Wilhelm, BLM Wildlife Biologist

## 7.0 BIBLIOGRAPHY

Brown, David E., 1994, *Biotic Communities Southwestern United States and Northwestern Mexico*: Salt Lake City, University of Utah Press.

Bureau of Land Management, 1995, *Kingman Resource Area Resource Management Plan and Final Environmental Impact Statement*.

Lathrop, E.W., and Archbold, E.F., 1980, Plant response to utility right of way construction in the Mojave Desert. *Environ. Management* 4(3):215-226.

Mohave County Public Works, 2011, *Mining Plan for Boundary Cone Material Site*

Natural Resources Conservation Service, 2006, *Soil Survey of Mohave County, Southern Part*.

Reynolds, Stephen J., 1988, *Geological Map of Arizona*, Arizona Geological Survey, Map 26.

Schrader, F.C., 1909, *Mineral Deposits of the Cerbat Range, Black Mountains, and Grand Wash Cliffs, Mohave County, Arizona*: U.S.G.S. Bulletin 397.

U.S. Geological Survey, *Groundwater Atlas of the United States*: HA-730-C.

Bureau of Land Management, Kingman Field Office  
FINDING OF NO SIGNIFICANT IMPACT

**NEPA Document Number:** DOI-BLM-AZ-C010-2011-0025-EA

Finding of No Significant Impact: Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that impacts are not expected to be significant and an environmental impact statement is not required.

/ s / Don McClure  
Field Manager, Kingman, acting Field Manager

10/01/2011  
Date

---

---

DECISION RECORD

**NEPA Document Number:** DOI-BLM-AZ-C010-2011-0025-EA

Decision: The Patterson Slope Gravel Pit is authorized under a Free Use Permit as described in the referenced EA. This gravel pit is located in NE ¼ NE ¼ Section 4, T. 28 N., R. 17 W., G. & S. R. M., near Meadview, Mohave County, Arizona

Rationale for Decision: Title 43 Code of Federal Regulations Subpart 3600, Mineral Material Disposal, provides government agencies access to mineral materials found on public lands free of charge. This benefits the agencies and the communities which they serve. These materials are required to construct and maintain roads and other public works.

Stipulations:

1.) CULTURAL RESOURCES

a.) Discovery of Cultural Resources in the Absence of Monitoring.

If, in its operations, operator/holder discovers any previously unidentified historic or prehistoric cultural resources, all work in the vicinity of the discovery will be suspended and the discovery promptly reported to BLM Kingman Field Office Manager. BLM will then specify what action is to be taken. If there is an approved “discovery plan” in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery and consult with the State Historic Preservation Officer in accordance with 36 CFR Section 800.11. Minor recordation, stabilization, or data recovery may be performed by BLM or a permitted cultural resources consultant. If warranted, more extensive treatment by a permitted cultural resources consultant may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resource will not be allowed until any required treatment is completed. Failure to notify the BLM about a discovery may result in civil or criminal penalties in accordance with the Archeological Resource Protection Act of 1979 (as amended).

b.) Discovery of Cultural Resources During monitoring.

If monitoring confirms the presence of previously unidentified cultural resources, all work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the BLM Kingman Field Office manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery and consult with the State Historic Preservation Officer in accordance with 36 CFR Section 800.11. Minor recordation, stabilization, or data recovery may be performed by BLM or a permitted cultural resources consultant. If warranted, more extensive treatment by a permitted cultural resources consultant may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resource will not be allowed until any required treatment is completed.

c.) Damage to Sites.

If, during operation, the operator damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding "discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare and execute a BLM-approved resource recovery plan. Damage to cultural resource may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act of 1979 (as amended).

2.) Copies of the production log(s), which detail the date, time and tonnage of each shipment, will be provided to the BLM authorized officer within two weeks of the end of each month of the permit term.

3.) No chemicals or fuels will be stored within the approved mining area without prior permission from the BLM Kingman Field Office Manager. If permission is granted, fuel will be kept in a confined area lined with an impervious material at least twelve (12) mils thick and twenty-four (24) inch berms around the storage facility that will adequately contain 110% of the volume being stored. During inclement weather, moisture will be removed from the confined area on a regular basis, so that the berms are never breached. The facility will be located away from drainages/washes, the edge of terraces, mesas or hillsides. Any spills will be reported to and coordinated for clean-up with the BLM.

4.) Fluids from equipment maintenance (i.e., oil, hydraulic fluids, filters, etc.) will be collected and disposed of properly. All trash, including that found adjacent to the permitted site and access road, will be hauled to an approved disposal facility on a periodic basis or when requested by BLM. No foreign substance (i.e., trash, asphalt milling or fragments, brush, logs or debris) will be introduced to the permitted site.

