

## ENVIRONMENTAL ASSESSMENT

### On an Application for an OPENCUT MINING PERMIT

The Montana Department of Environmental Quality (DEQ) prepared this Environmental Assessment (EA) in accordance with requirements of the Montana Environmental Policy Act (MEPA). An EA functions to identify, disclose, and analyze the impacts of a proposed action. This document may disclose impacts that have no legislatively required mitigation measures, or over which there is no regulatory authority.

The state law that regulates gravel mining operations in Montana is the Opencut Mining Act. This law and the rules adopted thereunder place operational guidance and limitations on a project during its lifetime, and provide for the reclamation of land affected by opencut mining operations.

Local governments and other state agencies may have authority over different resources and activities under their regulations. Approval or denial of this Opencut Application will be based on a determination of whether or not the proposed operation complies with the Opencut Mining Act and the rules adopted thereunder. The DEQ approval of this application would not relieve the operator from the obligation to comply with any other applicable federal, state, or county statutes, regulations, or ordinances. The operator is responsible for obtaining any other permits, licenses, approvals, etc. that are required for any part of the proposed operation.

**APPLICANT:** JMAC Resources, Inc.

**COUNTY:** Richland

**SITE NAME:** Carlisle Pit

**DATE:** September 2012

**LOCATION:** Section 8 & 9, Township 27 North, Range 56 East

**PROPOSAL:** The applicant proposes to permit a new, short-term gravel pit to mine, screen, crush, wash, stockpile and transport 100,000 cubic yards of gravel from a 55.4-acre site located 3 miles south of Culbertson, MT. The site is located approximately 1.7 miles west of the intersection of Hwy 16 and County Road 152. The site was mined prior to obtaining a permit. The site is located in a relatively erodible area that drains towards the Missouri River.

A reclamation bond would be held by DEQ to ensure that final reclamation of the site to rangeland/pastureland would be completed by November 2015. This application contains all items required by the Opencut Mining Act and its implementing rules. Proponent commits to properly conducting opencut operations and would be legally bound by the permit.

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<b>1. TOPOGRAPHY, GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:</b>	<p>The site is located in rolling to steep hills located approximately 200 feet south of the Missouri River. The geology of the area consists of red, pink, orange, black, and yellow, resistant sandstone, siltstone, and shale of the Fort Union Formation that was baked by natural burning of an underlying coal bed.</p> <p>The onsite soils consist of silty loams. The operator would replace 10 inches of soil and fertilize with 100 lbs/acre of 28-26-0.</p> <p>The site receives approximately 13 inches of precipitation a year.</p> <p><i>Impacts:</i> An irreversible and irretrievable removal of gravel from the site has and would occur. A large impact to the quantity and quality of soils from poor salvaging, stockpiling, and resoiling activities occurred; but the Operator would reclaim with onsite and salvaged soils. There are no unusual topographic,</p>

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	geologic, soil, or special reclamation considerations that would prevent reclamation success, so long as Best Management Practices (BMPs) to stabilize steeper slopes are implemented as described in permit.
<b>2. WATER QUALITY, QUANTITY AND DISTRIBUTION</b>	<p>The Missouri river is located approximately 200 feet north of the site. A relatively large ephemeral stream/drainage bisects the two mine sites/permit boundaries. Water for onsite dust control will come from an offsite source.</p> <p><i>Impacts:</i> The proposed activities would have a minimal effect on the quantity and quality of the surface and groundwater resources.</p> <p><i>Cumulative:</i> Cumulative impacts should be negligible.</p>
<b>3. AIR QUALITY</b>	<p>Air quality standards are based upon the Clean Air Act of Montana and pursuant rules and are administered by the DEQ Air Resources Management Bureau (ARMB). Its program is approved by the Environmental Protection Agency (EPA). These rules and standards are designed to be protective of human health and the environment.</p> <p>Air quality permits would be required on the processing equipment before installment. Machinery, such as generators, crushers and asphalt plants, are individually permitted for allowable emissions. Best Available Control Technology (BACT) is the usual standard applied.</p> <p>Fugitive dust is that which blows off the pit floor, stockpiles, gravel roads, farm fields, etc. It is considered to be a nuisance but not harmful to health.</p> <p><i>Impacts:</i> Air quality standards as set by the federal government and enforced by the ARMB would allow minimal detrimental air impacts.</p>
<b>4. VEGETATION COVER, QUANTITY AND QUALITY</b>	<p>There are no known rare or sensitive plants or cover types present in the site area. Onsite vegetation consists of a variety of native grasses and forbs, including but not limited to slender wheatgrass, bluebunch wheatgrass, western wheatgrass, ground juniper; and provides approximately 70% cover. The vegetation would be removed as soil is stripped and the site would be replanted with plant species compatible with the proposed reclaimed use.</p> <p><i>Impacts:</i> No long term detrimental impacts to the vegetation would occur.</p>
<b>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:</b>	<p>Although the area is used primarily for pasture, it also supports populations of deer, antelope, rodents, song birds, coyotes, foxes, raptors, insects and various other animal species. Population numbers for these species are not known.</p> <p><i>Impacts:</i> The proposed mine is expected to temporarily displace some individual species and it is likely that the site would be re-inhabited following reclamation to similar habitat.</p>
<b>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:</b>	<p>The Montana Natural Heritage Program (MNHP) lists the following 11 species of concern in the vicinity of the site:</p> <p><b>Piping Plover</b> (<i>Charadrius melodus</i>) is a small bird weighing only about 46 to 63 grams. Its wings, cheek patches crown and breast band are pale grey, while the rest of its body is white, except the tail, which is dark above the white terminal ends and upper tail coverts. The piping plover is migratory and usually arrives in Montana in early may and leaves the state by late August. They like unvegetated sand or pebble beaches on shorelines. They eat fly larvae, works and various other small insects.</p>

**IMPACTS ON THE PHYSICAL ENVIRONMENT**

<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
	<p><b>Least tern</b> (<i>Sternula antillarum</i>) is the smallest tern in North America, averaging 21 to 24 cm long with a wingspan of 51 cm. Its diminutive size, yellow bill, and white forehead are distinctive. The sexes are virtually identical. Least Terns nest on unvegetated sand-pebble beaches and islands of large reservoirs and rivers in northeastern and southeastern Montana. Sites with gravel substrate provide the most suitable sites for nesting. Generally the Least Tern consumes small fishes (generally less than 9 cm long), but sometimes eats crustaceans or insects.</p> <p><b>Pallid Sturgeon</b> (<i>Scaphirhynchus albus</i>) is the larger of the species of sturgeon found east of the continental divide. It grows to about 60 pounds. Because it is rare, little is known about this fish. The Pallid Sturgeon uses the Yellowstone River during spring and summer and the Missouri River below the confluence of the Yellowstone in the fall and winter. The Pallid sturgeon consumes minnows and bugs.</p> <p><b>Paddlefish</b> (<i>Polyodon spathula</i>) is an ancient mostly cartilaginous fish with smooth skin and a close relative of the sturgeon. It grows up to 150 pounds or more. They are readily identifiable by the long paddle-like snout, long, tapered gill covers, and the backbone bent up into the upper lobe of the tail fin. Spawning migrations are tied closely with the timing of spring highwater. Although young of the year paddlefish will “bite” at small food particles, they eventually switch to filtering for food.</p> <p><b>Sturgeon Chub</b> (<i>Macrhybopsis gelida</i>) is a native minnow found in the eastern Montana prairie river drainages. They have small eyes and many external papillae on their bodies and fins. They feed mostly on small invertebrates living on the bottom substrate.</p> <p><b>Sicklefin Chub</b> (<i>Macrhybopsis meeki</i>) is one of the rarest fishes in Montana. It is found in large, turbid streams in the plains region of Montana. It is similar to the sturgeon chub in appearance except that its pectoral fins are strikingly long. They have a conspicuous barbell at each corner of the mouth. They are a bottom feeder which locates its food primarily by taste.</p> <p><b>Blue Sucker</b> (<i>Cycleptus elongates</i>) is a fish that appears to inhabit only the larger streams, primarily the Missouri and Yellowstone rivers. It has an elongated shape, long dorsal fin and slate-blue coloration. It grows to slightly larger than 10 pounds. They prefer water with low turbidity and swift current. They feed mainly on aquatic insects.</p> <p><b>Sauger</b> (<i>Sander canadensis</i>) is a fish native to Montana east of the Continental Divide. It inhabits both large rivers and reservoirs, but is mainly a river fish. In the spring, sauger broadcast their spawn over riffles in rivers. Sauger are a highly prized sport fish and in some areas outside Montana are also a commercially fished. Their major food items are insects and small fish.</p> <p><b>Northern Myotis</b> (<i>Myotis septentrionalis</i>) is a bat with relatively long ears. It hibernates in abandoned mines in riverbank habitat in Richland county. The food habits of this bat are unknown.</p> <p><b>Eastern Red Bat</b> (<i>Lasiurus borealis</i>) is a moderately-sized lasurine (7 to 15 g) with long pointed wings and heavily-furred interfemoral membrane. Pelage overall is reddish, lighter on the belly than the back. The Eastern Red Bat migrates through eastern Montana, particularly along wooded and riparian areas. In other parts of its range, it is reported to prefer elm, box elder, wild plum, willow, hawthorn, sumac, and a variety of other woody plants for roosting, and</p>

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	<p>hibernates in woodpecker holes, tree foliage, and under loose bark. Eastern Red Bat feeds on flying insects in wooded areas, often on moths. These bats tend to be solitary, roosting singly or in female-litter groups, usually in foliage or tree cavities (1 to 6 m above ground but also at ground level) near habitat edges or water.</p> <p><b>Townsend's big-eared bat</b> (<i>Corynorhinus townsendii</i>) is a bat with very large ears joined at the base, prominent lumps on the nose, absence of large white spots in the pelage and a dorsal pelage that is darker at the tips than the base. The bat lives year-round in Montana. Habitat consists of caves, abandoned mines, abandoned buildings, etc. and it feeds on various nocturnal flying insects found near the foliage of trees and shrubs.</p> <p><i>Impacts:</i> None of the listed species have been found on this site. Even if suitable habitat did exist on this site, the disturbance area would be small and large areas of similar or identical habitat surrounds the site. The possible impact to these species would be minimal.</p>
<b>7. HISTORICAL AND ARCHAEOLOGICAL SITES</b>	<p>The Montana State Historic Preservation Office (SHPO) was notified of the application. It reported that some previously recorded historic or archaeological sites have been found in the area. A pedestrian survey of the area by DEQ personnel did not reveal any artifacts or signs of occupation. No signs were evident at depth in the previously disturbed area. SHPO recommends that a cultural resource inventory be conducted in order to determine whether or not sites exist and if they will be impacted.</p> <p><i>Impacts:</i> If during operations resources were to be discovered, activities would be temporarily moved to another area or halted until SHPO was contacted and the importance of the resources was determined.</p>
<b>8. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY</b>	<p>There are no unusual demands on land, water, air or energy anticipated as a result of this project.</p> <p><i>Impacts:</i> Negligible impacts to land, water, air, or energy would occur.</p>

<b>IMPACTS ON THE HUMAN POPULATION</b>	
<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<b>9. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS</b>	County zoning clearance is not needed for scoria mining.
<b>10. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING</b>	<p>As seen on the aerial photo of the surrounding area, there are no nearby residences.</p> <p><i>Impact:</i> This commercial pit is being sited in this area because of the location of the resource, and to provide scoria for the oil boom that is occurring in the eastern Montana and Western North Dakota area.</p>
<b>11. AESTHETICS</b>	<p>The site is located in a common rangeland/pastureland area. There would be a temporary alteration of aesthetics while mining is under way. However, reclamation would return the area to a visually acceptable landscape. This project is considered to be short-term, i.e., planned to take 3 years to complete. The hours of operation would be 24 hours a day, seven days a week.</p>

IMPACTS ON THE HUMAN POPULATION	
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<b>12. QUANTITY/DISTRIBUTION OF EMPLOYMENT</b>	Existing employees would mainly be utilized for this operation. There is low potential that this project would create a significant number of new jobs. <i>Impacts:</i> New employment opportunities would be limited.
<b>13. INDUSTRIAL, COMMERCIAL, AGRICULTURAL ACTIVITIES AND PRODUCTION</b>	The acreage listed in the proposal would be taken out of rangeland/pastureland use. Upon completion of mining, the land would be reclaimed to rangeland/pastureland. <i>Impacts:</i> Rangeland/pastureland production would be reduced as soil stripping and operations progress across the site. When the entire site is opened up for mining and mine-related activities, all rangeland/pastureland activities would cease.
<b>14. LOCAL, STATE TAX BASE AND TAX REVENUES, PERSONAL AND COMMUNITY INCOME</b>	Local, state and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, etc., from the companies, employees, or landowners benefitting from this operation. Following reclamation, it is assumed the tax base would revert to pre-mine levels.
<b>15. DEMAND FOR GOVERNMENT SERVICES</b>	Limited oversight by DEQ Opencut Program personnel would be conducted in concert with other area activity when in the vicinity.
<b>16. HUMAN HEALTH AND SAFETY</b>	Any industrial activity will increase the opportunities for accidental injury. There are agencies that require specific safety measures are in place. If followed there is no reason to believe that significant safety issues would be present.
<b>17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES</b>	This activity would not inhibit the use of the identified resources.
<b>18. NATIVE CULTURAL CONCERNS</b>	<i>Impacts:</i> None identified.

**19. Alternatives Considered:**

- A. Denial Alternative: The Department would deny an application that does not comply with the Act and Rules. No impacts to the natural or human environment would occur.
- B. Approval Alternative: The Department would approve an application that complies with the Act and Rules. Impacts of this application are addressed in the body of the EA.

**20. Public Involvement, Agencies, Groups or Individuals contacted:** Montana State Historic Preservation Office, Montana Natural Heritage Program, County commissioners, and DEQ ARMB.

**21. Other Governmental Agencies which May Have Overlapping or Sole Jurisdiction include, but may not be limited to:** Richland County Commission or County Planning Department (zoning), Richland County Weed Control Board, MSHA and OSHA (worker safety), DEQ ARMB (air quality) and Water Protection Bureau (groundwater and surface water discharge; stormwater), DNRC (water rights), and MDT (road access).

**22. Regulatory Impact on Private Property:** The analysis done in response to the Private Property Assessment Act indicates no impact. The Department does not plan to deny the application or impose conditions that would restrict the use of private property so as to constitute a taking.



## PRIVATE PROPERTY ASSESSMENT ACT (PPAA) CHECKLIST

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PPAA?

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deprive the owner of all economically viable uses of the property?
	X	4. Does the action deny a fundamental attribute of ownership?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? (If answer is NO, skip questions 5a and 5b and continue with question 6.)
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property?
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? (If the answer is NO, skip questions 7a-7c)
		7a. Is the impact of government action direct, peculiar, and significant?
		7b. Has the government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
		7c. Has the government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with § 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.

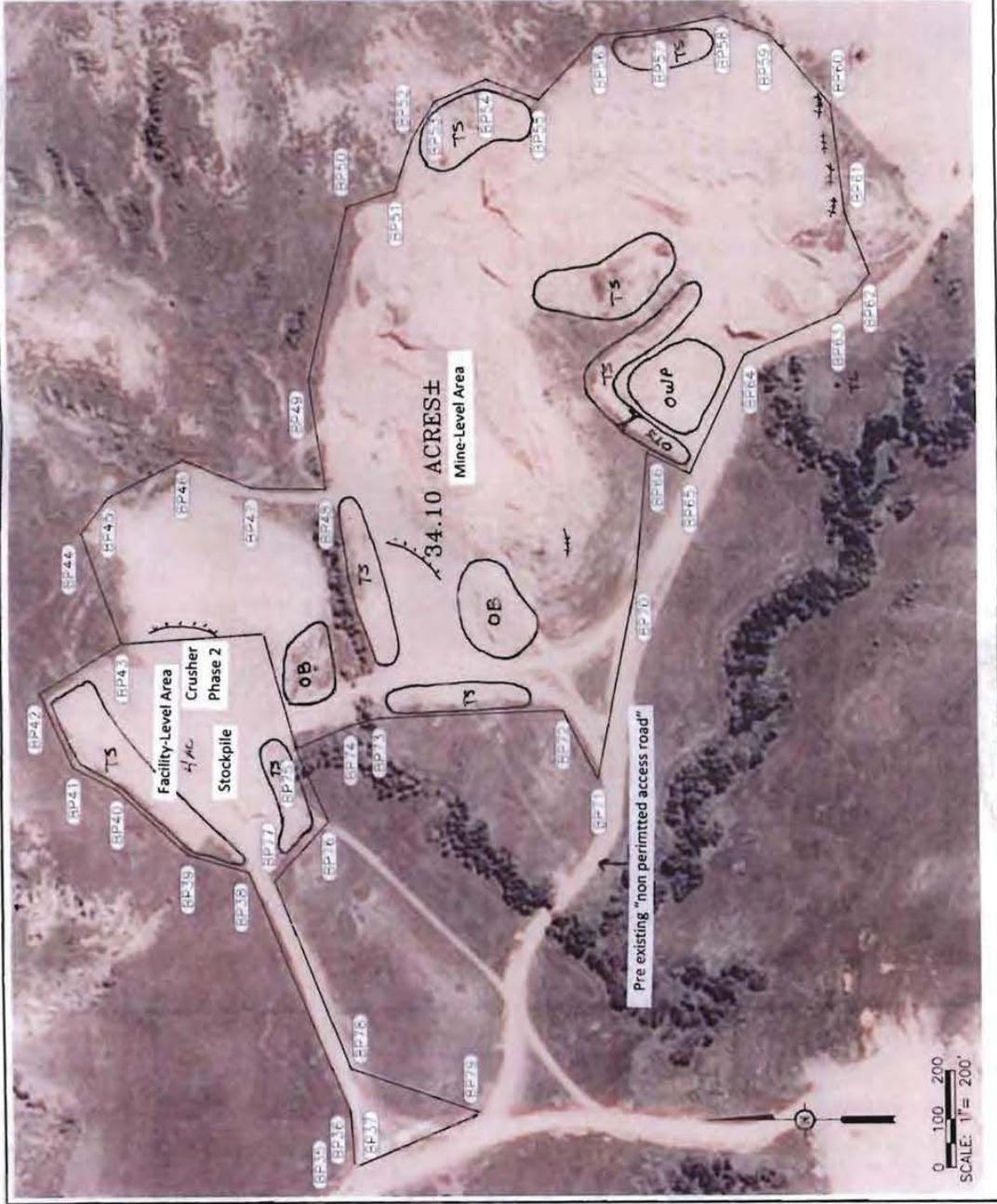
**SITE MAP**

Map 2 of 2

JMAC Resources, Inc.  
 CARLISLE PIT  
 S8 & 9, T27N, R56E  
 55.4 Acre Permit area  
 Drafted by Dean Gill 06/11/2012  
 Richland County

**LEGEND**

- TS = SOIL
- OB = OVERBURDEN
- TL = STOCK TANK RELOCATION
- OWP = OXIDE WASTE PILE
- OTS = OXIDE SOIL
- \*\*\* = UTA TTLES
- = MINE FACE



**SITE MAP**

Map 1 of 2  
 JMAC Resources, Inc.  
 CARLISLE PIT  
 S8 & 9, T27N, R56E  
 55.4 Acre Permit area  
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**LEGEND**  
 TS = SOIL  
 OB = OVERSHOOT  
 \*\*\* = DIRT TRENCHES  
 --- = MINE FENCE

