

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: Excel Industries

COUNTY: Richland

SITE NAME: Carlisle Pit 4

DATE: June 2013

LOCATION: Section 9, T27 N, R56 E

PROPOSAL: The applicant proposes to permit a new, short-term scoria pit to mine, screen, crush, stockpile and transport 45,000 cubic yards of scoria from a 9.7 acre site located 3 miles south of Culbertson, Montana. 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/pasture would be completed by July, 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.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
1. TOPOGRAPHY, GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:	<p>The site is located in rolling hills above the Missouri River floodplain. The steeper hills have exposed scoria outcrops on the ridgetops.</p> <p>Bedrock geology is Tertiary sediments of the Tongue River member of the Fort Union Formation. The Tongue River member is composed of interbedded sandstones, siltstones, claystone & shale, coal seams and clinker scoria beds. The scoria was baked by natural burning of underlying coal seams.</p> <p>The onsite soils consist of Lambert silt loam and Dimyaw silty clay loam. The operator would replace 12 inches of soil and 12 inches of overburden. Minerals, soil, and overburden have been mixed during the mining process. The operator would screen mixed materials to separate scoria from overburden and scoria</p>

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	<p>from usable soil. The operator would supplement soils with 4,000 lbs/acre of cattle manure compost and 100 lbs/acre of fertilizer. The site receives approximately 13 inches of precipitation per year.</p> <p><i>Impacts:</i> An irreversible and irretrievable removal of gravel from the site would occur. A small impact to the quantity and quality of soils from salvaging, stockpiling, and resoiling activities also would occur, but this would not impair the capacity of the soils to support full reclamation. There are no unusual topographic, geologic, soil, or special reclamation considerations that would prevent reclamation success.</p>
2. WATER QUALITY, QUANTITY AND DISTRIBUTION	<p>An ephemeral stream is located south and east of the site. Erosion control wattles and earthen berms would be used to keep materials from entering the stream drainage. Water would be used on site for dust control and would be obtained from a source greater than 1,000 feet from the permit boundary.</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 of the proposed action on resources would be negligible.</p>
3. AIR QUALITY	<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>
4. VEGETATION COVER, QUANTITY AND QUALITY	<p>There are no known rare or sensitive plants or cover types present in the site area. Onsite vegetation consists of creeping juniper, sagebrush, forbs and grasses including slender wheatgrass, bluebunch wheatgrass and western wheatgrass, 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>
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:	<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>

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6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:	<p>The Montana Natural Heritage Program (MNHP) lists the following 16 species of concern in the vicinity of the site:</p> <p>Whooping Crane (<i>Grus americana</i>) is the tallest bird of North America, reaching nearly 1.5 meters in height. The vocalization of the Whooping Crane is the feature that defines its common name. The loud resonating calls may be heard up to two miles away. The sexes appear similar; adult plumage is snowy-white overall, with males generally larger than females. The Whooping Crane has been observed in grain and stubble fields as well as wet meadows, wet prairie habitat, and freshwater marshes that are usually shallow and broad with safe roosting sites and nearby foraging opportunities. Migrants feed primarily in a variety of croplands. The Whooping Crane breeds monogamously with the same mate throughout life.</p> <p>Piping Plover (<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, worms and various other small insects.</p> <p>Least tern (<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>Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>) is a 31 centimeter-long bird with a stout slightly decurved bill, zygodactyl feet, grayish-brown dorsum, white venter (except tail), and a long tail that is patterned on the underside in gray with white feather tips. The bill is usually all dark, and may show yellow at the base of the lower mandible. There is a reddish eye ring. Black-billed cuckoos are summer residents and a nocturnal migrant. They typically arrive in Montana from early to mid-Jun and depart before October. They are found most often in riparian cottonwoods, green ashes, and American elms with a shrubby understory of willows, box elders, and alders.</p> <p>Pallid Sturgeon (<i>Scaphirhynchus albus</i>) is the larger species of sturgeon east of the continental divide, growing to 60 pounds. Because it is rare, little is known about it. 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>Paddlefish (<i>Polyodon spathula</i>) is an ancient cartilaginous fish with smooth skin; it is a close relative of the sturgeon. It grows up to 150 pounds and is 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 spring highwater. Although young of the year paddlefish will “bite” at small food particles, they eventually switch to filtering for food.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT

RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
	<p>Shortnose Gar (<i>Lepisosteus platostomus</i>) is a fish native to Montana and is found at only one location--the dredge ponds below Fort Peck Reservoir. Shortnose gar may reach a size and weight of about 31 inches and about 3.5 pounds. This prehistoric-appearing fish is cylindrically shaped, with an elongated bony head and snout containing one row of sharp, conical teeth. The dorsal fin is located well posterior and the pectoral and pelvic fins have no spots. The skin is covered with diamond shaped ganoid scales arranged in oblique rows, providing a very protective surface armor. Color varies from brownish or olive-green on the dorsal surface lightening to yellow on the sides and white on the belly. Gars are predaceous. They are spring, broadcast spawners. They have several unusual features including rectangular scales found only in primitive fishes, and a gas bladder that can function like a lung. Gars can survive in waters that have very little oxygen where most other fish would perish. Gar eggs are poisonous to humans.</p> <p>Northern Redbelly Dace (<i>Phoxinus eos</i>) is a Montana small minnow. Its maximum size is about 3 inches. The Northern Redbelly Dace is olive to dark brown above; the lower side and belly are yellow or silvery except on adult males during summer when the lower side is red. Northern Redbelly Dace are found in clear, cool, slow-flowing creeks, ponds and lakes with aquatic vegetation, including filamentous algae, and sandy or gravelly bottoms interspersed with silt. As with many small native stream fishes, Northern Redbelly Dace could be adversely affected by stream channelization, reductions to discharge, changes in water quality and temperature, and introductions of non-native predatory fishes.</p> <p>Sturgeon Chub (<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>Sicklefin Chub (<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>Blue Sucker (<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>Iowa Darter (<i>Etheostoma exile</i>) is a fish that is greenish or brownish with about eight saddle bands across the back and about nine to twelve dark blotches on the side. They range across much of south-central Canada and the north-central United States. They prefer clear slow-flowing streams with solid bottoms, although they have a wide range of tolerance for changes in water flow rates. Food consists mostly of small crustaceans and aquatic insect larvae.</p> <p>Sauger (<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</p>

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	<p>highly prized sport fish and in some areas outside Montana are also a commercial fish. Their major food items are insects and small fish.</p> <p>Townsend's big-eared bat (<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>Eastern Red Bat (<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 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>Brimstone Clubtail (<i>Stylurus intricatus</i>) is a small dragon fly like insect that lives in slow moving, warm muddy rivers in open country. Larvae feed on a wide variety of aquatic insects, such as mosquito larvae, other aquatic fly larvae, mayfly larvae and freshwater shrimp. They will also eat small fish and tadpoles. The adult dragon fly will eat almost any soft-bodied flying insect including mosquitoes, flies, small moths, mayflies, and flying ants of termites.</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>
7. HISTORICAL AND ARCHAEOLOGICAL SITES	<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 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 would 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>
8. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY	<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>

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
9. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS	County zoning clearance is not required for scoria mining.
10. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING	As seen on the aerial photo of the surrounding area, there are no nearby residences. <i>Impact:</i> This commercial pit is being sited in this area because of the location of the resource, and to service the need for domestic oil production by providing resources for facility roads and drill pads in this area.
11. AESTHETICS	The site is located in a common rangeland/pasture 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 three years to complete.
12. QUANTITY/ DISTRIBUTION OF EMPLOYMENT	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.
13. INDUSTRIAL, COMMERCIAL, AGRICULTURAL ACTIVITIES AND PRODUCTION	The acreage listed in the proposal would be taken out of rangeland/pasture use. Upon completion of mining, the land would be reclaimed to rangeland/pasture. <i>Impacts:</i> Rangeland/pasture 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/pasture activities would cease.
14. LOCAL, STATE TAX BASE AND TAX REVENUES, PERSONAL AND COMMUNITY INCOME	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.
15. DEMAND FOR GOVERNMENT SERVICES	Limited oversight by DEQ Opencut Program personnel would be conducted in concert with other area activity when in the vicinity.
16. HUMAN HEALTH AND SAFETY	Any industrial activity would 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.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES	This activity would not inhibit the use of the identified resources.
18. NATIVE CULTURAL CONCERNS	<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.

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.

