

ENVIRONMENTAL ASSESSMENT

On an Application for an

OPENCUT MINING AMENDMENT

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: Stillwater County Road Department

COUNTY: Stillwater

SITE NAME: Arnold

DATE: March 2015

LOCATION: Section 5, T5S, R18E

PROPOSAL: The applicant proposes to amend Opencut Permit #92 to update the plan of operation, reclamation plan, and extend the reclamation date. Operations would continue to mine, screen, crush, stockpile, and transport a lifetime volume of 250,000 cubic yards of gravel from the 18.2-acre site located 3 miles south of Fishtail, Montana. The site occupies two different land ownerships, divided by a private road. The road would remain, and each side would be mined into its own depression and have its own landowner stockpile remaining at final reclamation. Irrigation ditches and a buried phone line on the site would remain undisturbed.

Stillwater County Road Department would be liable to reclaim the site to rangeland/pasture by December, 2044. 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 on a gently rolling terrace trending north-northeast above the West Rosebud Creek valley.</p> <p>The geology of the site is alluvial gravel on terrace level 1 deposited during the Holocene. Clasts are mainly granitic igneous rocks, granitic gneiss, schist, and quartzite. The gravel deposits are 10 to 30 feet thick and underlain by sandstone bedrock.</p> <p>The onsite soils consist primarily of Absarokee-Sinnigam complex, 15 to 50 percent slopes, Turner clay loam, 4 to 8 percent slopes, and Work loam, 8 to 15 percent slopes. The operator would replace 12 inches of soil and up 6 inches of overburden.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
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	<p>The site receives approximately 14 to 19 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>Two irrigation ditches are located along the east and northwest margins of the site. They would remain intact and undisturbed by the project. An ephemeral drainage is located approximately 250 feet west. Water would be used onsite for dust control and would be obtained from a source greater than 300 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 on water resources by the proposed opencut actions 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 bluebunch wheatgrass, cheatgrass, sagebrush, and limited cottonwood, and provides approximately 80-90% 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 opencut mining, it also supports populations of deer, 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>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
<p>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:</p>	<p>The Montana Natural Heritage Program (MNHP) lists the following 5 species of concern in the vicinity of the site:</p> <p>Clark’s Nutcracker (<i>Nucifraga columbiana</i>) is a jay-sized corvid that is crowlike in build and flight, with moderate sexual size dimorphism. The bird is light to medium gray with varying amounts of white around the eyes, on forehead and on chin; white around vent and at base of tail; wings and tail glossy black. The bird has a long, pointed, black bill with short nasal bristles and makes a distinctive grating call audible at great distance.</p> <p>Great Blue Heron (<i>Ardea herodias</i>) is the largest heron in North America, 60 cm tall and 97 to 135 cm long. Its upper parts are gray, and the fore-neck is streaked with white, black, and rust-brown. Great Blue Herons breed from southern Alaska southeast across central Canada to Nova Scotia and south to Guatemala, Belize, and the Galapagos Islands. Most Montana nesting colonies are in cottonwoods along major rivers and lakes; a smaller number occur in riparian ponderosa pines and on islands in prairie wetlands. Great Blue Herons eat mostly fish but also amphibians, invertebrates, reptiles, mammals, and birds. Disturbance by humans and loss of protected colony sites are major threats.</p> <p>Bobolink (<i>Dolichonyx oryzivorus</i>) is a small new world blackbird and the only member of the genus <i>Dolichonyx</i>. These birds migrate to Argentina, Bolivia and Paraguay. Bobolinks forage near the ground, and mainly eat seeds and insects. They prefer tall prairie grass and other open areas with dense grass, but can also be found in hay fields.</p> <p>Greater short-horned lizard (<i>Phrynosoma hernandesi</i>) has a broad and flattened body, short spines crowning the head, a spiny back, and maximum total length of 6 inches. It ranges across much of Montana, mostly east of the Continental Divide. Habitat reports mention individuals on ridge crests between coulees, and in sparse, short grass and sagebrush with sun-baked soil.</p> <p>The MNHP also listed the presence of a Bat Roost that could indicate the presence of the following bat species:</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><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>
<p>7. HISTORICAL AND ARCHAEOLOGICAL SITES</p>	<p>The Montana State Historic Preservation Office (SHPO) was notified of the application. It reported that no sites have been previously recorded within the designated search locale. 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 does not feel that a cultural resource inventory is warranted at this site at this time.</p> <p><i>Impacts:</i> If during operations resources were to be discovered, activities would</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
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	be temporarily moved to another area or halted until SHPO was contacted and the importance of the resources was determined.
8. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY	There are no unusual demands on land, water, air or energy anticipated as a result of this project. <i>Impacts:</i> Negligible impacts to land, water, air, or energy would occur.

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
9. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS	Stillwater County zoning clearance has been obtained. The site is not zoned.
10. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING	As seen on the aerial photo of the surrounding area, there are a number of residences located along a West Rosebud Road, approximately 2,000 feet east of the site. The site has been mined by Stillwater County sporadically since the early 1970s. This amendment would reduce the hours of operation to 7a.m. to 7p.m., Monday through Friday. <i>Impact:</i> This county pit is sited in this area because of the location of the resource.
11. AESTHETICS	The site is located in a common pasture and hayland area. There would be a temporary alteration of aesthetics while mining is under way, although the majority of this alteration has previous taken place. However, reclamation would return the area to a visually acceptable landscape. This project is considered to be long-term, i.e., planned to take 29 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 pastureland use. Upon completion of mining, the land would be reclaimed to rangeland/pasture. <i>Impacts:</i> 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 pastureland activities would cease, but would be restored as the site is reclaimed.
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 the Operator to implement specific safety measures. If followed there is no reason to believe that significant safety issues would be present.

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

SITE LOCATION:
SE 1/4 of NW 1/4 of SE 1/4
and
NE 1/4 of SW 1/4 of SE 1/4
of SEC 5, T5S, R18E



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Legend

- | | | |
|--|----------------------------------|---|
| Amended Permit Boundary (Proposed) | Overburden Stockpiles (Proposed) | Irrigation Whiten West Ditch |
| Mine-Level Boundary (Proposed) | Soil Stockpiles (Proposed) | Silt Fence |
| Existing Mine-Related Disturbance | Mineral Stockpile (Existing) | Existing Fence Line |
| Existing Mine-Related Disturbance without soil cover | Soil Stockpile (Existing) | Buried Telephone Lines |
| Property Boundary (Approx.) | Waste Pile (To Be Removed) | Existing Landowner Road |
| Facility-level (equipment & processing) | Map ID Marker | General Direction of Mining Progression |
| | Test Pit Location Markers | |

AERIAL PHOTO: ESRI 2014

PROPERTY OWNERSHIP (APPROX.): NRIS 2015

0 100 200
SCALE IN FEET



SITE NAME: ARNOLD
OPERATOR NAME: STILLWATER COUNTY ROAD DEPARTMENT
STILLWATER COUNTY
SOUTH OF FISHTAIL, MONTANA

PROPOSED AMENDMENT ACREAGE
MAIN PERMIT AREA: 18.2 ACRES
MINE-LEVEL AREA: 13.3 ACRES

DRAFTED BY: ANDREA STANLEY
DRAFTING DATE: 3/5/2015
 THIS MAP HAS BEEN ADOPTED BY THE OPERATOR

RECEIVED BY OPENCUT 03/05/2015