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: Pioneer Ambitions, LLC

COUNTY: Cascade

SITE NAME: Eden Ridge

DATE: January 2016

LOCATION: Section 31, T20N, R4E

PROPOSAL: The applicant proposes to permit a new, long-term gravel pit to mine, screen, crush, stockpile, and transport 500,000 cubic yards of gravel from a 28.9-acre site located 4 miles south of Great Falls. The proposed boundary fully contains two areas of historical mine disturbance that would be reclaimed as a part of the reclamation plan.

A reclamation bond would be held by DEQ to ensure that final reclamation of the site to cropland/hayland would be completed by 2025. Reclamation would also include a 3:1 slope along the western boundary paralleling a property line. The slope would be grassed and would maximize the farmable area on the reclaimed mine floor.

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:	The site is situated on a planar plateau underlain with sandstone and capped with alluvial gravels. Complex topography exists in the northwest and northeast from historic mining activity. The onsite soils consist of Judith loam, 0 to 4 percent slopes. The operator would replace 10 inches of soil and 26 inches of overburden. The site receives approximately 14 to 18 inches of precipitation per year. *Impacts:* 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

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	**POTENTIAL IMPACTS AND MITIGATION MEASURES**
	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.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION	The site is situated on a plateau with no surface water features. Sand Coulee Creek is located approximately 1,000 feet north in a broad valley bottom approximately 100 vertical feet below the site. Water would be used onsite for dust control and in the crusher. It would be obtained from a source greater than 300 feet from the site and not stored onsite. *Impacts:* The proposed activities would have a minimal effect on the quantity and quality of the surface and groundwater resources. *Cumulative:* The proposed activities would likely have a negligible cumulative effect on the quantity and quality of the surface and groundwater resources.
3. AIR QUALITY	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. 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. 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. *Impacts:* Air quality standards as set by the federal government and enforced by the ARMB would allow minimal detrimental air impacts.
4. VEGETATION COVER, QUANTITY AND QUALITY	There are no known rare or sensitive plants or cover types present in the site area. Onsite vegetation consists of cultivated wheat; and provides various percentage of cover depending on the stage of the crop. The vegetation would be removed as soil is stripped and the site would be replanted with plant species compatible with the proposed reclaimed use. *Impacts:* No long term detrimental impacts to the vegetation would occur.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:	Although the area is used primarily for cropland, 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. *Impacts:* 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.
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:	The Montana Natural Heritage Program (MNHP) lists the following 9 species of concern in the vicinity of the site: **Great Blue Heron** (*Ardea herodias*) 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

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	**POTENTIAL IMPACTS AND MITIGATION MEASURES**
	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. **Bald eagle** (*Haliaeetus leucocephalus*) is a bird of prey found in North America that is most recognizable as the national bird and symbol of the United States of America. This sea eagle has two known sub-species and forms a species pair with the white-tailed eagle. Its range includes most of Canada and Alaska, all of the contiguous United States and northern Mexico. It is found near large bodies of open water with an abundant food supply and old-growth trees for nesting. **Hoary Bat** (*Lasiurus cinereus*) is a large lasurine (20 to 35 g) with long pointed wings and heavily-furred interfemoral membrane. Hoary Bat is the largest bat species found in Montana. Its dorsal pelage in is a mixture of browns and grays, tinges with white, giving the bat a frosted or hoary appearance. Hoary Bat is migratory and only a summer resident in Montana, and occupies forested areas. They are reported to favor moths but stomach contents of 7 individuals captured in Carter County revealed beetles, moths, true bugs, leafhoppers, lacewings and true flies. They are also carnivorous, and have been reported to attack, kill, and eat pipillistrel bats. **Spiny Softshell Turtle** *(Apalone spinifera)* is primarily a riverine species, occupying large rivers and river impoundments, but it also occurs in lakes, ponds along rivers, pools along intermittent streams, bayous, irrigation canals, and oxbows. It usually is found in areas with open sandy or mud banks, a soft bottom, and submerged brush and other debris. Adult females can reach 52 centimeters in carapace length, but much less in adult males (which average about 10 centimeters shorter). The shell of the spiny softshell is flattened (pancake-like), with flexible edges and covered with leathery skin; the snout is tubular; the tail is thick and long. **Dwarf woolly-heads** (*Psilocarphus brevissimus*) is a low annual with erect to prostrate, branched stems that are up to 5 cm tall. The alternate, lance-shaped leaves are 5-25 mm long, and the foliage is densely covered with white, tangled hairs. Minute flowers are borne in globose, woolly heads that are partially hidden among the upper leaves. Habitat consists of drying mud ponds and other vernally wet soil in the valleys and on the plains. **Little Indian Breadroot** *(Pediomelum hypogaeum)* is a perennial herb with a deep, club-shaped root that is up to 6 cm long and surmounted by a subterranean connecting stem. Above ground, the plant consists of a rosette of long-petioled leaves that are palmately divided. Blue, pea-like flowers are borne in condensed spikes arising among the bases of the leaf petioles at or barely above ground-level. Their habitat consists of loose, sandy soil of grasslands and open pine woodlands on the plains, below sandstone outcrops. **Roundleaf Water-hyssop** *(Bacopa rotundifoliais)* a fibrous-rooted perennial herb with branched, succulent stems, 10-40 cm long, that float on the surface of the water and root in mud at the nodes. The broadly elliptic to circular leaves, 1-3 cm long, are sessile and opposite each other on the stems. Newer foliage is short and hairy. Flowers are borne on stalks, 5-20 mm long, arising from the axils of leaves. The cup-shaped, white flowers are 5-10 mm long and have 5

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	**POTENTIAL IMPACTS AND MITIGATION MEASURES**
	equal lobes above a united tube that is yellow inside. There are 4 small stamens. The calyx is composed of 5 separate sepals, one much broader than the others. Globose capsules, 3-6 mm high, contain numerous small seeds. **Many-headed Sedge** *(Carex sychnocephala)* Caespitose. Stems erect, 5–50 cm. Leaves basal and cauline; blades 1–3 mm wide. Inflorescence of 4 to 12 sessile spikes in a dense head; lower bracts erect, much longer than the inflorescence. Spikes 4–8 mm long, all similar; female flowers above few male. Perigynia erect, linear-lanceolate, green to tan, wing- and serrulate-margined, 3–6.5 × 0.8–1 mm, tapered to the serrulate beak, 3–5 mm long; stigmas 2. Female scales lanceolate, acuminate, tan-hyaline with a green midvein, shorter or longer than the perigynia. Achene 2-sided, smaller than the perigynium. **Guadalupe Water-nymph** *(Najas guadalupensis)* is a submerged aquatic annual with slender, branching stems up to about 7 dm long. The opposite, ribbon-like leaves, usually with additional leaves in their axils, are 0.5-2 cm long and have minutely toothed margins and enlarged bases. Tiny unisexual flowers, both male and female on the same plant, are borne singly, without stalks, in the axils of leaves. The male flowers have a single stamen enclosed in a translucent bract which is surrounded by a firmer bract, and the female flowers consist of a single naked pistil. The fruits are single seeded with a thin, papery covering. The long tapered seeds are round in cross-section and are dull and coarsely pitted with 10-20 rows of pits across the middle. *Impacts:* 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.
7. HISTORICAL AND ARCHAEOLOGICAL SITES	The Montana State Historic Preservation Office (SHPO) was notified of the application. It reported that no sites have been discovered previously 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. *Impacts:* 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.
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. *Impacts:* 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	Cascade County zoning clearance has been obtained. Zoning requires a Special Use Permit for Sand and gravel Pits (SUP-9-15)

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	**POTENTIAL IMPACTS AND MITIGATION MEASURES**
10. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING	As seen on the aerial photo of the surrounding area, there numerous residences in the vicinity, but very few within 1,000 feet or on the plateau the site occupies. *Impact:* This commercial pit is being sited in this area because of the location of the resource, and to service the need for aggregate in the surrounding area.
11. AESTHETICS	The site is located in a common cropland/hayland 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 long-term, i.e., planned to take 10 years to complete. Hours of operation would be limited to 7am to 7pm, Monday through Sunday for all activities. The site would be mined in such a way as to screen visibility and noise from residences located at the same elevation to the east by keeping most mine operations on a lower floor and the highwall between the operation and residences.
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. *Impacts:* New employment opportunities would be limited.
13. INDUSTRIAL, COMMERCIAL, AGRICULTURAL ACTIVITIES AND PRODUCTION	The acreage listed in the proposal would be taken out of cropland/hayland use. Upon completion of mining, the land would be reclaimed to cropland/hayland. *Impacts:* Cropland/hayland 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 cropland/hayland 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.
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	*Impacts:* 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, Cascade County Planning Division.

21. Other Governmental Agencies which May Have Overlapping or Sole Jurisdiction include, but may not be limited to: Cascade County Commission or County Planning Department (zoning), Cascade 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.

23. Magnitude and Significance of Potential Impacts: This proposal is not likely to create impacts of significance due to mitigation, restrictions, and oversight mandated by the Opencut Mining Act and pursuant rules and the Montana Clean Air Act.

24. Recommendation for Further Environmental Analysis: [ ] EIS [X] No Further Analysis

EA Prepared By:	Bryan Allison	Opencut Mining Program Environmental Specialist
	Name	Title
EA Reviewed By:	Chris Cronin	Opencut Mining Program Supervisor
	Name	Title

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.