

ENVIRONMENTAL ASSESSMENT

TM Site

Montana Mineral Products

Prepared by:

Montana Department of State Lands

May 14, 1992

ENVIRONMENTAL ASSESSMENT

APPLICANT: MONTANA MATERIAL PRODUCTS

TYPE OF OPERATION: OPENCUT MINING-SAND AND GRAVEL

LOCATION: SE 1/4, SEC.5, T7S, R4E

COUNTY: GALLATIN

PERSON PREPARING E.A.: JERRY BURKE

APPLICATION COMPLETE: _____
Date

E.A. COMPLETE: 5-14-92
Date

	POTENTIAL IMPACTS					
	A	B	C	LONG TERM	SHORT TERM	AMPLIFICATION
PHYSICAL ENVIRONMENT						
1. <u>TOPOGRAPHY</u>			X			X
2. <u>GEOLOGY</u> ; Stability			X			
3. <u>SOILS</u> ; Quality, Distribution			X	X		X
4. <u>WATER</u> ; Quality; Quantity; Distribution			X			
5. <u>AIR</u> ; Quality			X	X		X
6. <u>UNIQUE, ENDANGERED, FRAGILE, or LIMITED</u> environmental resources			X			
BIOLOGICAL ENVIRONMENT						
1. <u>TERRESTRIAL, AVIAN, and AQUATIC</u> ; species and habitats			X	X		X
2. <u>VEGETATION</u> ; quantity, quality, species			X	X		X
3. <u>AGRICULTURE</u> ; grazing, crops production			X	X		X
HUMAN ENVIRONMENT						
1. <u>SOCIAL</u> ; structures and mores			X			
2. <u>CULTURAL</u> uniqueness, diversity			X			
3. <u>POPULATION</u> ; quantity and diversity			X			
4. <u>HOUSING</u> ; quantity and distribution			X			
5. <u>HUMAN HEALTH & SAFETY</u>			X	X		X

	A	B	C	POTENTIAL IMPACTS		
				LONG TERM	SHORT TERM	AMPLIFICATION
6. <u>COMMUNITY & PERSONAL INCOME</u>			X			
7. <u>EMPLOYMENT</u> ; quantity and distribution			X			
8. <u>TAX BASE</u> ; local and state tax revenue			X			X
9. <u>GOVERNMENT SERVICES</u> ; demand			X			
10. <u>INDUSTRIAL, COMMERCIAL</u> and <u>AGRICULTURAL</u> activities			X			
11. <u>HISTORICAL</u> and <u>ARCHAEOLOGICAL</u>			X			
12. <u>AESTHETICS</u>			X			X
13. <u>ENVIRONMENTAL PLANS</u> and <u>GOALS</u> ; local and regional			X			X
14. <u>DEMANDS</u> on <u>ENVIRONMENTAL RESOURCES</u> of land, water, air and energy			X			X
15. <u>TRANSPORTATION</u> ; networks and traffic flows			X			

PUBLIC INVOLVEMENT: PUBLIC MEETING

ALTERNATIVES CONSIDERED: DENIAL

COMPLIANCE STATUS: DECISION PENDING

RECOMMENDATIONS CONCERNING PREPARATION OF AN EIS: NOT NECESSARY AT THIS LEVEL OF DISTURBANCE

OTHER GROUPS OR AGENCIES CONTACTED OR WHICH MAY HAVE OVERLAPPING JURISDICTION:

AIR QUALITY BUREAU DHES

INDIVIDUALS OR GROUPS CONTRIBUTING TO THIS EA: DSL STAFF

- A: Significant Unavoidable Impacts
- B: Insignificant as a result of conditioned mitigation
- C: Insignificant as proposed

Signature

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CHAPTER I - INTRODUCTION

A. PURPOSE AND NEED

This Environmental Assessment (EA) has been prepared to evaluate impacts that would occur if the Department of State Lands (DSL) approves or denies the application to conduct opencut mining operations with attendant processing facilities.

B. PROPOSED ACTION

Montana Mineral Producers, Inc. (MMP) has submitted to the DSL an application for a Mined Land Reclamation Contract that if approved, would allow opencut mining operations for sand and gravel on a 10.0 acre tract of land approximately 45 miles south of Bozeman, Montana. Upon completion of the operation the site would be reclaimed to a post-mine land use compatible with live-stock grazing. (See Attachment A)

C. BENEFITS

Materials produced as a result of the proposed action would be utilized for providing the local area with sand and gravel.

D. AGENCY ROLES AND RESPONSIBILITIES

1. Department of State Lands

The Commissioner of State Lands must decide whether to 1) approve MMP's application as submitted, 2) approve with modifications, or special mitigative stipulations, or 3) deny the application pursuant to Montana's Opencut Mining Act (OCMA) Title 82, Chapter 4, Part 4, MCA.

The DSL administers the OCMA. The purpose of the act is to preserve natural resources, to aid in the protection of wildlife and aquatic resources, to safeguard and reclaim through effective means and methods all agricultural, recreational, home, and industrial sites subjected to or which may be affected by opencut mineral mining to protect and perpetuate the taxable value of property, to protect scenic, scientific, historic, or other unique areas, and to promote the health, safety, and general welfare of the people of this state. The act and its rules and regulations (ARM 26.4.201 et seq.) set forth the steps to be taken in the issuance of a mined land reclamation contract and for the reclamation of the applicants proposed operation. This act applies to private, federal and state lands within Montana.

DSL's rules (ARM 26.2.601 et seq.) implementing the Montana Environmental Policy Act (MEPA) Title 75, Chapter 1, MCA also require preparation of an environmental analysis. The Department has determined that an Environmental Assessment is appropriate for this project. This EA has several purposes:

- a. It serves to ensure that the agency uses the natural and social sciences in planning and decision making;

- b. It assists in the evaluation of reasonable alternatives and the development of conditions, stipulations or modifications to be made a part of the proposed action;
- c. It ensures the fullest appropriate opportunity for public review and comment on proposed actions, including alternatives and planned mitigation; and
- d. It examines and documents the effects of a proposed action on the quality of the human environment.

2. State Historic Preservation Office

The State Historic Preservation Office is responsible for cooperating with and advising DSL when potentially valuable historical, archaeological, or other cultural resources are located within a project area. Advice given to DSL may include comments on an applicant's plan for impact mitigation of sites eligible for nomination to the National Register of Historic Places. During mine operations DSL is responsible for monitoring compliance with the historic preservation plans.

3. Department of Health and Environmental Sciences

a. Air Quality Bureau (AQB)

The AQB administers the Clean Air Act of Montana (Title 75, Chapter 2, MCA). Any proposed project with potential to emit more than 25 tons per year of any pollutant must obtain an air quality permit prior to operating. The applicant must apply Best Available Control Technology (BACT) to each emission source. The applicant must also demonstrate that the project would not violate Montana or Federal Ambient Air Quality Standards. An Air Quality Permit has been applied for this operation.

CHAPTER II - PROPOSED ACTION AND ALTERNATIVES

The proposed action and one alternative have been evaluated as a part of this analysis. The alternative is the Denial Alternative.

A. PROPOSED ACTION

MMP is proposing to mine and process sand and gravel from a 10.0-acre tract of land that is currently a bench of alluvial material used for grazing cattle and was mined and reclaimed in the 1970's. To the immediate south is an existing gravel pit operated by MMP (which is nearly depleted), to the southeast is a motel complex, to the east is Highway 191, and across the highway is a mobile home park. Mining and processing would be preceded by the salvage and stockpiling of all available topsoil followed by removing gravel to a depth of approximately 20 feet on approximately 7.72 acres of the 10.0 using front-end loaders. The material would be stockpiled and a loader would be used to haul the material to a trap and conveyor which would feed the crusher. The crusher would process the material into different size fractions and the end products would be stockpiled to the east.

Reclamation would be concurrent with mining and consist of reducing affected slopes to a 3h:1v or flatter, ripping compacted areas, retopsoiling, and seeding all affected land to a mix compatible with the post-mine land use of livestock grazing.

B. ALTERNATIVE 1 - DENIAL

This alternative would not alter the present state of rangeland. Sand and gravel for the local vicinity would have to be mined from another source upon depletion of the existing nearby source controlled by MMP.

CHAPTER III - EXISTING ENVIRONMENT

A. TOPOGRAPHY

The proposed mine site is located on a bench.

B. GEOLOGY

Geologically, the area is identified a morainal deposits reworked by the Gallatin River and is of the Quaternary age.

C. SOILS

The soils in the undisturbed portion of land to be affected are a clay loam 8 to 12 inches deep with rocks on the surface. They are further defined as Cryoboralfs-Cryoborolls and are undulating to rolling soils in valleys and on foothill glacial moraines.

D. WATER

The nearest surface water is the Gallatin River, approximately 0.5 miles east of the proposed operation.

E. AIR QUALITY

Baseline air quality in the project area is assumed to be typical of natural background levels for western Montana. There are no significant pollutant sources in the general area. Minor sources include vehicle traffic on unpaved roads, logging activities, home and business heating, and the occasional operation of the nearby sand and gravel site.

F. UNIQUE, ENDANGERED, FRAGILE, OR LIMITED RESOURCES

None of the above resources were noted on site, and plants listed in the Natural Heritage Program were not present.

G. TERRESTRIAL, AVIAN, AND AQUATIC SPECIES AND HABITAT

Occasional elk, deer, song birds, and rodents have been observed on or near the proposed operation.

H. VEGETATION

The existing vegetation consists primarily of Kentucky bluegrass, rough fescue, big sagebrush, numerous forbs and phlox. A climax community at this location would be expected to support Idaho fescue, Columbia needlegrass, Richardson needlegrass, pinegrass, grouse whortleberry, elk sedge, blue wildrye, common beargrass, bearded wheatgrass, Saskatoon serviceberry, spike trisetum, subalpine fir, douglas fir, Engelmann spruce, heartleaf arnica, blue and dwarf huckleberry, mallow ninebark, and Oregongrape.

I. AGRICULTURE

The proposed mine site is currently rangeland used for grazing livestock.

J. EXISTING HUMAN HEALTH AND SAFETY FACTORS

The proposed mine site currently has no human health or safety concerns.

K. AESTHETICS

The current visual perception of the proposed site is rangeland which has man-made modifiers such as the existing sand and gravel operation, various businesses, the highway, and a mobile home park across the highway.

L. NOISE

Current noise levels at this location vary with highway traffic, activities at the various businesses, and industrial (sand and gravel) operations.

M. ENVIRONMENTAL PLANS AND GOALS

The proposed operation is not within an area which has been zoned by Gallatin County.

CHAPTER IV - ENVIRONMENTAL IMPACTS-CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVE

A. TOPOGRAPHY

Proposed Action

The proposed operation would affect the existing topography by creating an amphitheater which would have 3h:1v or flatter slopes to the south, north, and west and daylight and drain to the east.

1. Mitigation

The proposed post-mine contours would meet the requirements of the Opencut Mining Act. All slopes would be reduced to 3h:1v or flatter and blend with the surrounding topography.

Alternative

The existing topography would not be altered from its present state.

B. SOILS

Proposed Action

Soil structure and horizonation on undisturbed portions would be altered to a certain extent as a result of soil salvage and redistribution activities. Soil compaction may result from stockpiling, and there may be a deterioration of soil quality due to a reduction in beneficial soil microfauna and microflora.

1. Mitigation

The operator would be required, and has committed to evenly replacing all available soils over the affected area. All compacted areas would be ripped, and soil microbes would reinvade and colonize the replaced soils.

Alternative

Soils would not be altered from their current state.

C. WATER

Proposed Action

As with any operation using petroleum-based fuels in areas of high groundwater, the potential exists for fuel spills and leaks.

1. Mitigation

The operator could line with plastic and construct berms, around all fueling and storage areas. Petroleum and other toxic products would be taken off-site and disposed of in an approved manner.

Alternative

Groundwater would not be impacted above current levels.

D. AIR QUALITY

All gravel operations produce fugitive dust and other particulate matter from the excavating, crushing, soil and gravel stockpiles, and haul roads. Other gaseous pollutants (nitrogen oxides and carbon monoxide) would also be emitted from combustion sources associated with vehicle exhaust from mobile equipment.

1. Mitigation

The operator must secure an air quality permit from the Montana Air Quality Bureau to verify compliance with local, state, and federal air quality requirements. Applicable federal regulations which are implemented by the state, are the Standard of Performance for New Stationary Sources, 40 CFR, Part 60, Subpart 000 sets an opacity limitation on fugitive dust emissions from the gravel crushing and handling operations.

Typical measures used to minimize air pollutant emissions include:

- 1) water spray bars on the crusher;
- 2) watering of haul roads and work areas with a water truck; and,
- 4) the establishment of a cover crop on topsoil stockpiles to control wind erosion.

Alternative

The air quality would not be further degraded at this location, but would most likely come from an alternate site.

E. TERRESTRIAL, AVIAN, AND AQUATIC SPECIES AND HABITATS

Proposed Action

The proposed operation would disrupt just about all normal patterns of species utilizing this land.

1. Mitigation

Upon the eventual reclamation of the site would be in better condition to be utilized for livestock grazing. The grass species that would be planted would be more compatible with the proposed reclaimed use than what is currently on the site.

Alternative

Current species would continue utilizing the area.

F. VEGETATION

Proposed Action

Vegetation on the land to be affected would be destroyed as soil is salvaged.

1. Mitigation

The operator has proposed, and would be required to, revegetate the entire affected area. Species compatible with the post-mine land use would be planted. Reclamation bond would not be released until that cover had established and was capable of reproducing.

Alternative

Vegetative cover would remain as is.

G. HUMAN HEALTH AND SAFETY

Proposed Action

The workers at the site would be protected by various state and federal laws which require protective equipment for workers and certain safety requirements on machinery. Anyone wandering into the operation where heavy equipment is operating would be at risk of injury.

1. Mitigation

The operator could assign personnel to keep watch and warn people of the equipment dangers.

Alternative

Safety related to the site would not be altered.

H. AESTHETICS

The proposed operation would create a visually unappealing site until such time as reclamation is completed.

1. Mitigation

The operator could place stockpiled topsoil to the south, east, and north of the operation to reduce some of the visual impact. The topsoil stockpiles could then be vegetated to further reduce the visual impact.

Alternative

The site would remain as is.

I. NOISE

Proposed Action

The operation would generate additional noise. The crusher and screens, excavating equipment, back-up sirens, and trucks would be responsible for the majority of noise created. Table 1 compares a typical operation with other noise levels.

1. Mitigation

The operator could restrict his hours of operation such that additional noise generated would cause the least discomfort to those impacted.

J. TAX BASE: LOCAL AND STATE TAX REVENUE

Proposed Action

There is no evidence that this operation would affect the taxable value of property. Taxable value would be modified only upon successful appeal to the State Tax Appeal Board. To this date, taxes have not been lowered in Montana as a result of a nearby sand and gravel operation.

1. Mitigation

Assurances that the land to be affected will be reclaimed to a productive use, and requiring the affected area to be reseeded within one year of operation cessation would be in place.

Alternative

No change from the present is expected.

K. ENVIRONMENTAL PLANS AND GOALS: LOCAL AND REGIONAL

Proposed Action

The area proposed for operation is currently not zoned by Gallatin County.

1. Mitigation

None.

Alternative

No changes.

L. DEMANDS ON ENERGY

Proposed Action

Mining of this site will require the expenditure of energies in the form of fuels.

1. Mitigation

None.

Alternative

The denial of this application could result in the materials being mined and processed from another source which could result in greater hauling distances, and therefore consume greater amounts fuel.

M. TRANSPORTATION: NETWORKS AND FLOWS

Trucks hauling from the gravel pit could cause additional wear and tear of the road, but must abide by posted weight restrictions and obey all traffic laws. It is felt that trucks hauling from this site will not contribute significantly to the traffic using Highway 191.

1. Mitigation

None.

Alternative

Another source could be found for the sand and gravel, but there is the possibility that the site may be farther from the area which would be served by the proposed pit thus increasing the danger of accidents between motorists using the highway and the trucks hauling to and from the pit.

N. CUMULATIVE IMPACTS

Proposed Action

Cumulative impacts on the biological environment from this proposal are considered to be insignificant because of the size. Even though vegetation, soils, terrestrial, and avian species will be temporarily displaced, reclamation will be concurrent with mining, and those impacts will be reversed. Air quality would be maintained as per state standards, and water quality would not be impacted.

Alternative

No cumulative impacts from the denial.

CHAPTER V - SUMMARY AND CONCLUSIONS

The principle areas of concern for this application are: noise, water quality, visual impacts, and air quality.

Analysis of the aforementioned has resulted in the following conclusions:

1. Additional noise will be created as a result of the proposed operation. However, limiting the hours of operation would limit the impacts to the nearby mobile home park and motel.

2. The groundwater will most likely not be affected due to precautions such as impermeable fueling and fuel storage areas, lined scrubber ponds, and short duration of the project.

3. There will be a visual impact from equipment on site, but this would be lessened by the placement of the equipment behind the topsoiled berms.

4. There will be a decrease in air quality, but it would be minimized by the stipulations placed on the operator and their equipment by the Air Quality Bureau.

5. Placing the topsoil berms to the south, north, and east and vegetating them would lessen the visual and noise impacts.

CHAPTER VI - RECOMMENDATIONS

The Department has concluded that the proposed operation with mitigation measures enforced by contract stipulations would not seriously impact the human and biological environment, and an Environmental Impact Statement is not warranted for this level of disturbance.

Attachment A

PLAN OF OPERATION MONTANA MATERIAL PRODUCERS-TM SITE

Section I- Premining Conditions

- (1) Topography: The site is located on an alluvial deposit.
- (2) Present land uses, and past mining disturbances, if any: The area has been mined by the landowner, and a highwall existed prior to this operation. The surrounding land is sage brush flats.
- (3) Estimated depth to the water table: 30 ft. below existing ground level.
- (4) Locations, descriptions, and uses of surface water features: No streams or pounds exist on site.
- (5) Locations, depths, and uses of water wells: None within 1000 feet.
- (6) Soil types to be disturbed: Clayloam mixed with rocks up to 16 inches.
- (7) Dominant vegetation: Sage Brush, Fescues and Blue Grass.
- (8) Use by wildlife: Transient use by game animals, with more frequent use by rodents and birds.
- (9) Other useful information: land has been used as a gravel pit in the past.

Section II- Mining and Reclamation Plan

- (1) (POSTMINING LAND USES): Replace top soil to mining area, seed back with native grasses and returned to livestock grazing.
- (2) (SOIL AND OVERBURDEN HANDLING) All available soil material will be stripped from any area that will be excavated or used as a permanent disposal site; if available, up to 6 inches of soil material will be stripped, or bladed off of all overburden and mineral stockpile areas, all processing facility areas, and all staging areas and access, haul, and support road locations that will be improved; and soil materials will be salvaged and stockpiled separately from overburden, and stockpiled where they will not be lost to erosion or disturbed by mining activities. Proposed methods and depths of soil and overburden material salvage: Soils will be salvaged to a minimum of 3 inches on top, but it varies to 8 inches + in other areas. All available will be salvaged with a dozer or front-end loader.
- (3) (ROAD CONSTRUCTION) All access, haul, and support roads will be located, constructed, and maintained in a manner that will control erosion. Road improvements and construction: An access

road already exists to the site, and has been improved at the request of the landowner. Culverts have been installed to handle excess runoff and high groundwater. An exit road will be constructed for equipment to exit site, and approach will be built to meet Montana Highway Department specifications.

(4) (WATER MANAGEMENT) Existing drainage will be maintained to allow for proper drainage from site.

(5) (WATER PROTECTION) Surface and groundwater will be given appropriate protection from deterioration of water quality and quantity that could be caused by mining and reclamation activities. Additional information: If necessary, we will construct small earthen berms to prevent any sediment from entering the creeks. We will line all fueling areas with an impermeable material such as bentonite or heavy plastic, and construct a berm such that the maximum amount of fuel on site at any one time would be contained in the event of a spill or leak.

(6) (GRADING) To the extent possible, all surfaces will be graded to conform to the surrounding topography, including drainageways; graded to 3:1 or flatter (4:1 or flatter on sand); and left at least 3 feet above the estimated highest seasonal water table. Planned postmining topography; backfilling, grading, and overburden replacement methods are to: If returned to grazing, the hill will be backsloped to a 3:1.

(7) (ROAD RECLAMATION) Upon abandonment, all road locations will be graded to conform to the surrounding topography, including drainageways, then ripped, topsoiled, and seeded. Roads, or portions thereof, to remain, and stabilization methods: The road will remain for landowner use, as it was existing prior to our entry.

(8) (REFUSE DISPOSAL) To the extent possible, refuse will not be placed where it could be encountered by future mining operations; refuse not conducive to plant growth, including road, facility, and stockpile area surface waste, will be buried under at least 3 feet of overburden or other suitable material; oversize mineral, reject mineral, and excess overburden will not be placed on sideslopes or in drainageways, unless a plan for such disposal is approved by the Department; and petroleum and other toxic materials will be disposed of in a manner that will not cause water pollution. Proposed methods, sites, and fill areas for refuse disposal: Refuse will not be disposed of on this site.

(9) (MINERAL STOCKPILES) To the extent possible, excess minerals left on site will be consolidated into stockpiles of similar grade and left in a common area close to a primary access point; any reject mineral remaining stockpiled will be graded to 4:1 or flatter; and sufficient stockpiled soil will be left, shaped and seeded, for the future reclamation of sites where mineral stockpiles remain. Additional information: Unless left for the landowner all stockpiles will be removed from the site. Any materials left for the landowner will be adjacent to the access road.

(10) (REVEGETATION)

(a) Methods and depths of ripping: With the shanks of a dozer or blade to a depth of 12 inches on 12 inch centers.

(b) Methods and depths of topsoiling: With a dozer to a minimum depth of 3 inches, but it will all be spread evenly. Much of the soil was wasted from the previous operations.

(c) Methods, types, rates, and times of fertilizer or other amendment application: None anticipated.

(d) Methods of seedbed preparation: Following the redistribution of topsoil, we will disk or harrow, whichever is more appropriate at the time of reclamation.

(e) Methods, species, rates, and time periods for seeding or planting:

Hard fescue	4#pls/acre
Beardless wheatgrass	3#pls/acre
Streambank wheatgrass	4#pls/acre
Yellow sweetclover	1/2#pls/acre

(f) Methods, types, and rates of mulch application: 1 1/2 tons/acre of clean dry straw crimped in with a dozer over all slopes.

(11) (WEED CONTROL) All seed will be weed free and noxious weeds will be controlled as specified in the respective district weed management plan. Additional weed control measures: Possibly mowing.

(12) (SITE PROTECTION AND MANAGEMENT) Proposed methods and arrangements for the protection and management of seeded or planted areas: If the site is in a pastured area, we will fence until vegetation is established.

(13) (CONCURRENT AND FINAL RECLAMATION) Reclamation will be concurrent with mining, and all grading, topsoiling, and revegetation work will be completed within 1 year after the cessation of mining and related activities on any area of significant size. Estimated completion date of the final reclamation of all affected areas: 1997, unless lease is renewed.

(14) (RECLAMATION COSTS) Estimate of the on-site, per-acre costs for the reclamation of the proposed mine and facility level disturbances, and estimated total costs to reclaim the entire site:

Grading and ripping	\$150/acre
Topsoiling and site prep	\$400/acre
Seed and mulch	\$150/acre
Weed control	\$ 50/acre

Section III- Fire Prevention, Archaeological and Historical Value Protection, Annual Reports, and Field Personnel and Subcontractors

- (1) Proper care will be taken to prevent wildfires;
- (2) Archaeological and historical values in the affected area will be given appropriate protection. Should significant archaeological or historical value be found, the operation will be routed around the site of discovery for a reasonable time until salvage can be made. The State Historical Preservation Office will be promptly notified;
- (3) The Annual Progress Report requirements of ARM 26.4.206 will be complied with; and
- (4) All parties involved in the mining and reclamation of the site will be familiar with the specifics of the Mining and Reclamation Plan.

Section IV- Additional Information (refer to the appropriate subsections and attach other information as necessary)

Materials used for fill will be retrieved with a backhoe and placed at the toe of the slop unless such material is useful as a soil substitute, and it would be used as a coversoil.

I CERTIFY THAT THE STATEMENTS AND INFORMATION GIVEN APPLY TO THE TM SITE. THIS PLAN WILL BE FOLLOWED UNLESS OFFICIALLY MODIFIED BY THE OPERATOR OR THE DEPARTMENT.

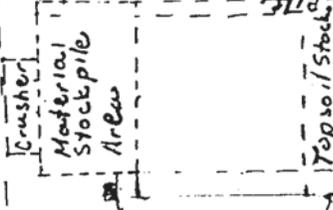
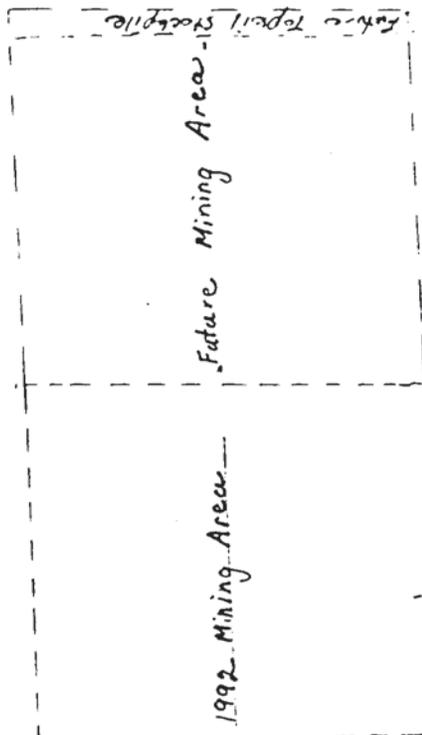
Signature

Date

Montana Material Products



Scale 1" = 200'



Haul Road

Culvert

Highway 191

11.11.11

