

**FINAL ENVIRONMENTAL ASSESSMENT**  
 May 20, 1999

Project Name: Flood Site  
 Proponent: United Materials of Great Falls

Proposed Implementation Date: Ongoing

**Type and Purpose of Action:** The proponent has submitted an amendment *application* to Mined Land Reclamation Contract # 00259 increasing the contract acreage from 2 to 49 acres, *that if approved would result in the mining, crushing, washing, stockpiling, and transporting of 618,600 cubic yards of sand and gravel to supply the local market. The proposal is located 1/2 mile north of Woodland Estates. Final reclamation would be approximately December 2030. The reclaimed use would be grassland.*

Location: SE1/4, Sec. 5 & NE1/4, Sec. 8, T19N, R3E County: Cascade

Changes from the Draft Environmental Assessment are in Italics

N = Not present or No Impact will occur.

Y = Impacts may occur (explain under Potential Impacts).

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
<b>RESOURCE</b>	<b>[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<p>1. <b>GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:</b> Are fragile, compactible or unstable soils present? Are there unusual geologic features? Are there special reclamation considerations?</p>	<p>[N] The proposed mine is located on a bench to the north of the Missouri River. The bench consists of sedimentary rock overlain by sand and gravel of an alluvial nature. There are no unusual geologic features.</p> <p>The Natural Resource Conservation Service classifies the soils as either a Tally fine sandy loam or Torex loamy sand. Generally the soil is from 6 inches to 4 feet deep and averages 1.5 feet. There are pockets in the northern area of the proposed operation where the soil is deeper. Also in the past prior to the advent of any reclamation laws approximately 17 acres of the site was mined. There is a stockpile of soil and overburden, which was stripped and stockpiled on the north edge of the prelaw mined area. All available soil would be stripped and salvaged for the reclamation of the site. The site would generally receive 1.5 feet of soil upon regrading, except in the prelaw areas which would receive approximately 5 inches of soil from the existing prelaw soil and overburden stockpiles and areas within the north area which will receive approximately 4 feet of soil. All topsoil stockpiles would be seeded with the approved seed mixture and rate to prevent any loss due to water or wind. There are no fragile, compactible or unstable soils</p> <p>The reclamation of the site poses no special reclamation considerations.</p>
<p>2. <b>WATER QUALITY, QUANTITY AND DISTRIBUTION:</b> Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?</p>	<p>[Y] The nearest surface waters are several ponds to the west in a riparian area. The Missouri River, at its closest point to the proposed operation, is to the south, <i>approximately 1,000 feet</i>. The applicant has a pumping facility at the river and has a water right filed with the Montana Dept. of Natural Resources to remove water from the river to supply the wash plant. The applicant's wash plant would use approximately 8,000 gallons per day 5 days a week for approximately 7 months. There may be times when the wash plant would be operated outside of the above schedule. The water is pumped to a holding pond through a 6-inch PCV pipeline.</p>

A series of settling ponds and concrete raceways treat the sediment-laden water from the wash plant before the water is returned to the holding pond.

The holding pond, settling ponds, and ditches connecting the ponds would be lined with 4 to 6% bentonite mixed with a clayey reject material from the proponent's Johnson Pit, to prevent water loss and flooding of the riparian area to the west. The lining would be 6 inches deep and be compacted to a minimum of 95%. The engineering study, done by an independent engineering firm, recommended the above, which the proponent has committed to in the Plan of Operations. (See attached site map and Plan Of Operations for settling pond design and engineering report.)

The maximum depth of mining would be approximately 20 feet. This distance is measured from the top of the bedrock to the top of the maximum height of the gravel deposit.

The elevation difference from the top of the bedrock to the elevation of the ponds is approximately 15 feet. This would reflect the water table to the west. The fluctuation of the water table would change as the ponds water level fluctuates, which is dependent on the change of water flow in the river. There are 16 water wells recorded with section 5 and 9 wells within section 8 they are from 80 to 493 feet deep, yield 10 to 75 gallons per minute, and have static water levels of 40 to 232 feet.

**Sample wells located in section 5 and section 8:**

WELL	LOCATION	DEPTH	YIELD (GPM)	STATIC LEVEL	YEAR DRILLED
Strathy/lyons	SW4 NE4, Sec. 5	323'	33	69'	1992
Engbrecht	SW4 NE4, Sec. 5	417'	30	70'	1990
Juras	SE4 SE4, Sec. 5	200'	15	28'	1992
Michelotti	SE4 SE4, Sec. 5	250'	3	155'	1974
Abbott(Tacke)	SW4 SW4, Sec. 5	90'	50	60'	1940
Abbott	NW4 NW4, Sec. 8	100'	15	33'	1997
Lewis	SE4 NW4, Sec. 8	126'	20	15'	1995
Lamphier	NE4, Sec. 8	190'	50	8'	1987
Rothwell	NE4, Sec. 8	255'	38	20'	1977
Holland	NE4 NE4, Sec. 8	260'	75	30'	1995

The design of the settling pond system would have to be approved by the department.

Special precautions would be taken to minimize possible contamination of the groundwater. All bulk fuel and lubricants would be brought in daily to the site. Portable equipment with fuel tanks such as loaders, trucks, and crushers would be operating in various places within the facility. Generally, the crusher would operate on power from Montana Power Company lines, but there may be occasion when a generator would be used. The wash plant uses power provided by Montana Power Company. Any accidental spills or leaks from equipment would be excavated and disposed of. No waste or trash would be disposed of at the site. With these precautions, the quality and quantity of the groundwater should not be adversely impacted.

**3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?**

**[Y] The site is not located within a Class I Airshed. Air quality would be degraded and there would be an increase in particulate matter and odor. Dozers, loaders, crushers and trucking equipment typically cause dusty conditions in disturbed soil sites. However, the plant is regulated for dust and other emissions, and the equipment used must be permitted by DEQ. Spray bars will be**

	used on the crusher and transfer points, and water would be applied within the site as needed to reduce dust.
<p><b>4. VEGETATION COVER, QUANTITY AND QUALITY:</b> Will vegetative communities be permanently altered? Are any rare plants or cover types present?</p>	<p>[Y] There are no known rare or sensitive plants in the site area. A literature search by the Montana Natural Heritage Program did note the presence of Chaffweed, roundleaf water-hyssop and many-head sedge approximately 7 miles east of the operation. These plant species occupy ponds, moist meadows, drying vernal ponds and stream edges. Since this site is located in a dry environment these species would not be found on the proposed expansion.</p> <p>On the 47-acre amendment approximately 17-acres lacked significant vegetation due to past mining done prior to the advent of reclamation laws. The remaining area has vegetation consisting mainly of a few cottonwood trees, various wheatgrasses and prairie sandreed. Knapweed and dalmation toadflax are also growing on the site. The proponent will contract the Cascade County Weed Board and set up a program to control noxious weeds.</p>
<p><b>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:</b> Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[Y] The area of the proposed expansion may see occasional use by various small, medium and large mammals, amphibians, reptiles and birds. The Montana Natural Heritage Program noted the presence of a bald eagle nest approximately 2,000 feet to the west.</p> <p>Due to the other impacts in the area, including recreation and subdivisions and the fact that the gravel mining facility has been in operation for approximately 30 years, there should be no impact to the bald eagle nest from the expansion. Geese, ducks, and various other birds use the riparian areas to the west. Additionally, deer, fox and a variety of other mammals frequent the riparian area. Various species of fish are found in the Missouri River.</p>
<p><b>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:</b> Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?</p>	<p>[Y] The Montana Natural Heritage Program has identified a bald eagle nest as being present approximately 2,000 feet west of the operation, but the proposed expansion should not impact the nest. There are wetlands identified as being present to the west of the existing and proposed operation, but there are no wetlands present on the current or proposed operations. The Montana Natural Heritage Program identified several plant species of special concern as being present approximately 7 miles east of the operation. See 4 &amp; 5 above.</p>
<p><b>7. HISTORICAL AND ARCHAEOLOGICAL SITES:</b> Are any historical, archaeological or paleontological resources present?</p>	<p>[N] A Cultural Resources Inventory was conducted and no resources were identified.</p> <p>Should a significant archaeological or historical value be found, the operation would be routed around the site of discovery for a reasonable time until salvage can be made. The State Historic Preservation Office would be promptly notified.</p>
<p><b>8. AESTHETICS:</b> Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?</p>	<p>[Y] There would be a long-term change in aesthetics while the operation is under way. However, improvements in aesthetics may occur in the reclamation of the prelaw mining and reclamation will return the area to a visually acceptable landscape. Topsoil berms would reduce impacts of both noise and light along the north and south sides of the site. The berms would be planted</p>

	<p>with the approved seed mixture and rate. A tackifier would be applied at the time of seeding to help prevent loss of soil to wind erosion.</p> <p>The site is visible by homes and to traffic using Flood Road, Woodland Estates Road and by recreationists along the Missouri River. <i>Normal hours of operation for the wash plant would be from 6:00 A.M. to 7:00 P.M. (Monday – Friday), 7 months a year. If situations require, the plant may be operated on a 24-hour per day basis for periods of time as the project requires or demands. The crusher would normally have the same hours of operation as the wash plant, but it also may operate 24 hours per day for periods of time as the project demands or requires, and may occur 10 to 12 months per year.</i> Hauling from stockpiles or pit-run gravel from the pit may occur at any time. Mining and other aspects of the operation could occur at any time.</p> <p>Lights and generators running for 24 hours per day could increase local impacts, but the location of the soil berms would cut down on the impacts.</p> <p>On-site noise levels generated by operating equipment at the pit are generally within the range of 60 to 90 decibels, but decrease with distance. As a comparison, sound levels for ordinary activities such as close conversation and music from a radio are 60 decibels and 70 decibels and are considered to be moderate. Levels above 90 decibels are severe, and prolonged exposure can lead to hearing loss. There is also noise from loaders and truck traffic hauling to various projects. These impacts are intermittent and of relatively short duration.</p>
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<p>9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?</p>	<p>[N]</p>
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<p>10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other studies, plans or projects on this tract?</p>	<p>[N]</p>
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**IMPACTS ON THE HUMAN POPULATION**

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
<p>11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?</p>	<p>[Y] Heavy equipment and operating facilities including scrapers, trucks, loaders and batch plants would create hazards, but the operator must comply with all MSHA and OSHA regulations. The operator must employ proper precautions to avoid accidents.</p> <p>Excessive and prolonged noise and light could increase stress for nearby residents and induce difficulty sleeping. Both of these effects may be considered harmful to human health if the activities are continuous. This proposed operation should not significantly affect human health.</p>

<p>12. <b>INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:</b> Will the project add to or alter these activities?</p>	<p>[Y] 49 acres of that listed in the Type and purpose of Action would be taken out of grassland, until such time as the site is successfully reclaimed.</p>
<p>13. <b>QUANTITY AND DISTRIBUTION OF EMPLOYMENT:</b> Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[N]</p>
<p>14. <b>LOCAL AND STATE TAX BASE AND TAX REVENUES:</b> Will the project create or eliminate tax revenue?</p>	<p>[N] To date, it has not been shown that this type of operation has resulted in a reduction in taxable value of property, and it is not anticipated that this project would alter past assessments. The presence of an industrial site adjacent to a residential area has the potential to reduce the desirability of surrounding land as a location to live until reclamation is completed, and therefore the marketability of improved and unimproved real estate may be temporarily diminished for homesites as some prospective buyers would not purchase these properties for that use. It should be noted that since the operating of the gravel pit began in the 1960's much of the land surrounding the gravel pit has been subdivided and rural residences have been built.</p>
<p>15. <b>DEMAND FOR GOVERNMENT SERVICES:</b> Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?</p>	<p>[Y] The operation would require periodic site evaluations by DEQ staff until such time as the site is successfully reclaimed to the required post-mining use. However, these evaluations are usually performed in conjunction with other area operations.</p>
<p>16. <b>LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:</b> Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?</p>	<p>[Y] Cascade County zoning clearance has been obtained. The area is not zoned.</p>
<p>17. <b>ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:</b> Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?</p>	<p>[N]</p>
<p>18. <b>DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:</b> Will the project add to the population and require additional housing?</p>	<p>[N]</p>
<p>19. <b>SOCIAL STRUCTURES AND MORES:</b> Is some disruption of native or traditional lifestyles or communities possible?</p>	<p>[N] The area has generally been used as grassland and mining in the past. Locals would notice a change in the site as junk is cleaned up, topsoil berms are created and vegetated, and gravel is extracted. They would notice equipment continuing to work and truck traffic coming and going. Upon reclamation, a 17-acre portion of the site would be improved from its current condition and should improve land values in the area.</p>
<p>20. <b>CULTURAL UNIQUENESS AND DIVERSITY:</b> Will the action cause a shift in some unique quality of the area?</p>	<p>[N]</p>

<b>21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:</b>	<b>[N]</b>
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22. Alternatives Considered:

- A. Denial: The pit would not be permitted and impacts from mining would not occur at this location. The owner of the gravel resource would be denied full utilization of his property at this time.
- B. Approval of the application: The Plan of Operation has been written with mitigating conditions including water protection, soil salvage, and construction of aesthetic berms.

23. Public Involvement, Agencies, Groups or Individuals contacted: State Historic Preservation Office, Montana Heritage Program, Cascade County Weed Control District and Planning Dept., Water Rights Bureau of DNRC, three completed and signed Resident Notification forms were submitted not opposing the operation, Don Lilienthal, landowner; & Graham Taylor, Regional Wildlife Manager, Montana Dept. of Fish Wildlife and Parks. *On May 20, 1999 a meeting was held at a local residence to discuss the draft EA. Those parties who signed the Resident Notification forms, the landowner and the president of United Materials were in attendance. The persons in attendance reviewed the EA and had comments regarding the hours of operation and the sealing of the ponds.*

24. Other Governmental Agencies with Jurisdiction, List of Permits Needed: Montana Department of Environmental Quality for Air Quality (crusher plant) Permit and Stormwater Discharge Permit; Mine Safety and Health Administration for safety permit; Montana Department of Labor & Industry, Bureau of Safety for safety permit; Cascade County Planning Office for zoning; Montana Department of Natural Resources for the water right.

25. Magnitude and Significance of Potential Impacts: Impacts are unlikely to be significant on the general environment because of the lack of significant or threatened wildlife or habitat, and because of the measures in the Plan of Operations. The site would be operated with concurrent reclamation and aesthetic soil berms with vegetation would be placed along the east and west sides of the operation. Impacts to groundwater quantity, quality and distribution would be negligible due to the fact that mining would not intercept the groundwater, the holding pond and settling ponds would be sealed and any spills would be excavated and removed. Water used at the site would be extracted from the Missouri River using an approved water right. Fuel and lubricants would be brought in daily.

26. Regulatory impact on private property: The analysis conducted in response to the Private Property Assessment Act indicates no impact.

Recommendation for Further Environmental Analysis:

EIS     More Detailed EA     No Further Analysis

EA Checklist Prepared By:         Jerry Burke                 Supervisor, Opencut Mining Program, IEMB          
Name Title

Approved By:         Steve Welch         Title:         Bureau Chief, Industrial & Energy Minerals Bureau        

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Signature Date