

Draft

Environmental Impact Statement North Rasmussen Ridge Mine

Agrium Conda Phosphate Operations
Caribou County, Idaho

Lead Agency:

**U.S. Department of Interior
Bureau of Land Management
Upper Snake River District
Pocatello Field Office**



Cooperating Agencies:



Idaho Department of Lands

**U.S. Department of Agriculture
Forest Service
Caribou-Targhee National Forest**



March 2003

DRAFT ENVIRONMENTAL IMPACT STATEMENT

NORTH RASMUSSEN RIDGE MINE

LEAD AGENCY: U.S. Department of Interior
Bureau of Land Management
Upper Snake River Districts
Pocatello Field Office

COOPERATING AGENCIES: U.S. Department of Agriculture
Forest Service
Caribou-Targhee National Forest

Idaho Department of Lands

PROJECT LOCATION: Caribou County, Idaho

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ABSTRACT

This Draft Environmental Impact Statement analyzes impacts related to the expansion of mining at Agrium's North Rasmussen Ridge Mine in southeast Idaho. The Proposed Action includes developing two mine pits and a haul road. Use of existing support and transportation systems would continue. Existing operations at the Central Rasmussen Ridge Mine are approved in a 1997 Mine Plan Approval. This environmental analysis reviews potential impacts from selenium and updates the previous impact analyses for other resources. Alternatives to the Proposed Action are also analyzed and site specific mitigation measures developed. The BLM Preferred Alternative is the Proposed Action because it disturbs the least acreage of the action alternatives and all waste material is returned back to the pits.

The BLM and USFS believe, at this early stage, it is important to give reviewers notice of several court rulings, related to public participation in the environmental review process. First, reviewers of draft environmental impact statements must structure their participation in the environmental review of the proposal so that it is meaningful and alerts an agency to reviewer's position and contentions. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519,553 (1978). Also, environmental objections that could be raised at the draft EIS stage but that are not raised until after completion of the final EIS may be waived or dismissed by the courts. City of Angoon v. Hodel, 803 F. 2d 1016, 1022 (9th Cir. 1986) and Wisconsin Heritages, Inc. v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Because of these court rulings, it is very important that those interested in this proposed action participate by the close of the 60-day comment period for the draft EIS so that substantive comments and objections are made available to the BLM and USFS at a time when they can meaningfully consider and respond to them in the final EIS.

RESPONSIBLE OFFICIAL FOR DEIS: Mr. K. Lynn Bennett
Idaho State Director
Bureau of Land Management

EIS NUMBER: ID-075-2001-0016

ACRONYMS

AAQS	Ambient Air Quality Standards	NAAQS	National Ambient Air Quality Standards
ABA	Acid Base Accounting	NEPA	National Environmental Policy Act
AGP	Acid-Generating Potential	NHPA	National Historic Preservation Act
amsl	Above Mean Sea Level	NOAA	National Oceanic and Atmospheric Administration
ANP	Acid-Neutralizing Potential	NOI	Notice of Intent
ARD	Acid Rock Drainage	NPDES	National Pollutant Discharge Elimination System
AUM	Animal Unit Month	NRHP	National Register of Historic Places
BA	Biological Assessment	ppm	Parts Per Million
bcy	Bank Cubic Yard	PSD	Prevention of Significant Deterioration Air Quality Program
BE	Biological Evaluation	RCRA	Resource Conservation and Recovery Act
BLM	Bureau of Land Management	RHCA	Riparian Habitat Conservation Area
BMP	Best Management Practices	ROD	Record of Decision
CEQ	Council on Environmental Quality	ROS	Recreation Opportunity Spectrum
cfs	Cubic Feet Per Second	SAR	Sodium Adsorption Ratio
CFR	Code of Federal Regulations	SHPO	State Historic Preservation Office
COPC	Constitutes of Potential Concern	SIO	Scenic Integrity Objective
CWA	Clean Water Act	SPCC	Spill Prevention Control and Countermeasures Plan
°C	Degrees Celsius	SWPPP	Storm Water Pollution Prevention Plan
°F	Degrees Fahrenheit	TCP	Traditional Cultural Property
DEIS	Draft Environmental Impact Statement	TDS	Total Dissolved Solids
EA	Environmental Assessment	TES	Threatened, Endangered, or Sensitive Species
EC	Electrical Conductivity	TMDL	Total Maximum Daily Load
EIS	Environmental Impact Statement	tpy	Tons Per Year
EPA	Environmental Protection Agency	USACE	United States Army Corps of Engineers
ESA	Endangered Species Act of 1972	USDOT	United States Department of Transportation
FEIS	Final Environmental Impact Statement	USFS	United States Forest Service
FLPMA	Federal Land Policy and Management Act	USFWS	United States Fish and Wildlife Service
gpm	Gallons Per Minute	USGS	United States Geological Survey
HDPE	High-Density Polyethylene	VMS	Visual Management System
HUC	Hydrologic Unit Code	VQO	Visual Quality Objective
IDAPA	Idaho Administrative Procedures Act		
IDEQ	Idaho Department of Environmental Quality		
IDFG	Idaho Department of Fish and Game		
IDL	Idaho Department of Lands		
IDWR	Idaho Department of Water Resources		
IMA	Idaho Mining Association		
INFISH	Inland Native Fish Strategy		
K factor	Hydraulic Conductivity		
lcy	Loose Cubic Yard		
LRMP	Land and Resource Management Plan		
Maxim	Maxim Technologies, Inc.		
MCL	Maximum Contaminant Level		
µg/m ³	Micrograms Per Cubic Meter		
meq/l	Milliequivalent Per Liter		
mg/L	Milligrams Per Liter		
mg/kg	Milligrams Per Kilogram		
mm	Millimeters		
mgpd	Million Gallons Per Day		
mph	Miles Per Hour		
mmhos/cm	millimhos of electrical current		
MSHA	Mine Safety and Health Administration		

Dear Reader:

Enclosed for your review and comment is the Draft Environmental Impact Statement (DEIS) for Agrium Conda Phosphate Operation's North Rasmussen Ridge Mine. The DEIS serves to analyze the effect of continuing mining operations for eight years beyond the current permit. The North Rasmussen Ridge Mine consists of two open pits and a haul road extension that are located approximately 19 miles northeast of Soda Springs in Caribou County, Idaho.

This DEIS addresses those concerns identified by the BLM or raised during public scoping from May 18 through June 5, 2001. The BLM, in conjunction with all interested parties, will propose mitigation measures to address incremental impacts which are over and above what was approved for the existing South and Central Rasmussen Ridge Mines.

Following the 60-day public review and comment period, a Final EIS will be prepared. It will include mitigation measures that address both predicted direct impacts from Agrium's proposed mining operations, as well as for predicted cumulative impacts from other activities in the area.

Public comments on the DEIS will be accepted during a 60-day comment period. Comments on the DEIS should be submitted to: Bureau of Land Management, Pocatello Field Office, Attention: Wendell Johnson, EIS Project Manager, 1111 North 8th Avenue, Pocatello, ID 83201, e-mail address: ID_NRasmussen_EIS@blm.gov.

The Final EIS may be published in an abbreviated format, so please retain this draft document for future reference. Your interest in the management of public lands is appreciated.

Sincerely,

K. Lynn Bennett
Idaho State Director

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SUMMARY

PROPOSED ACTION

Nu-West Industries, Inc., doing business as Agrium Conda Phosphate Operations (Agrium) has proposed to extend the existing mining operations at South and Central Rasmussen Ridge northward along the ridge onto lands administered by the U.S. Forest Service and Idaho Department of Lands. The project is located on public lands 19 miles northeast of Soda Springs in Caribou County, Idaho (**Figure S-1**). Mining would occur on Federal Phosphate Leases I-04375 and I-07619 within the Caribou-Targhee National Forest, and on State Lease I-9313, adjacent to the federal phosphate leases. Lease I-04375 contains 920 acres, and Lease I-07619 contains 437 acres. Lease I-04375 in its entirety and 200 acres of Lease I-07619 are located within the Caribou National Forest, and the remaining 240 acres of Lease I-07619 are on state land. The northeast corner of Section 16, T6S, R43E of the Boise Meridian contains Idaho mineral lease number I-7957, which is held by P₄ Production, LLC. A portion of the North Rasmussen ore body is located within that lease area. Agrium reached an agreement with P₄ (Agrium/P₄ Production Ore and Overburden Exchange Agreement) to acquire the mineral rights for this lease. IDL has reissued the lease as Agrium State Lease Number 9313. The proposed disturbance activities are shown by land ownership in Chapter 2, Table 2.2-2.

Disturbed lands that would result directly from the activities proposed would total 269 acres. The new pits would include 199 acres; the rest of the disturbed acreage would be for roads, ponds, and growth media stockpiles. All of the waste rock generated from the proposed pit would be placed as backfill in the Central and North Rasmussen pits after the ultimate pit depths have been achieved. Approximately 1,015,716 cubic yards of growth media would be salvaged and several hundred thousand cubic yards would be used immediately to cover disturbed areas. A storage area for the growth media would be developed to temporarily store up to 918,000 cubic yards of material. All available topsoil and alluvium from the pit would be directly applied to completed and re-sloped areas where possible or would be salvaged and held in the growth media storage area for future use. Approximately 197 acres of the proposed disturbance would be reclaimed. Most of the proposed open pits would be backfilled to approximate original contours, and one pit would be partially backfilled. Based on Agrium's current annual production rate, the life span of the proposed North Rasmussen Ridge Mine would be about 8 years.

ALTERNATIVES

Two alternatives to the Proposed Action were evaluated in the EIS: Alternative 1 – Proposed Action with Impermeable Capping of Backfilled Areas, and Alternative 2 – No Action. Alternative 1 is essentially the same as the Proposed Action except that Agrium would construct a layer of impermeable (low-permeability) material between the seleniferous waste and the applied growth media to minimize potential effects of water that could infiltrate into the backfill. This alternative would require a 26-acre external waste rock dump. Capping could be completed with clay material or a synthetic liner. If clay is used, a quarry of approximately 25 acres would be required. Total disturbance for Alternative 1 would be 320 acres. Under Alternative 2, No Action, no disturbance would occur at North Rasmussen Ridge, however, the 35-acre final pit would remain open at Central Rasmussen.

Figure S-1: Site Location Map

ENVIRONMENTAL IMPACTS

Proposed Action

Minerals, Topography, Geology, and Paleontology

Impacts associated with the Proposed Action would include: commitment of recoverable phosphate resources in the area of the Rasmussen Ridge to development; physical changes to topography and exposure of rocks; potential instability of disturbed slopes; potential damage to fossils; and potential exposure of earth materials that contain potentially harmful concentrations of selenium or other elements to weathering processes. If they are exposed, earth materials that contain selenium or other elements would increase the potential for release of these constituents into surface waters or soils. The release of unfavorable concentrations of selenium or other elements into the environment and subsequent uptake by plants or animals could have adverse effects on plant or animal life. Fossil resources, some with potential scientific significance, would be unavoidably destroyed by mining.

Air Resources

Standard environmental practices for evaluating impacts to air resources require consideration of the airshed [generally, the surrounding airshed within 100 kilometers (66 miles)] as well as to the immediate area. The North Rasmussen Ridge Mine is located in southeastern Idaho on Rasmussen Ridge between the Grays and Wooley mountain ranges.

The Proposed Action would create emissions of nitrogen oxides, carbon monoxide, volatile organic carbon, sulfur dioxide, and particulate matter with a 10-micron mean diameter. All these emissions would be within the NAAQS and would not be considered an impact to human health. The nearest residence is more than two miles northeast of the project site and the nearest sensitive area (Grays Lake National Wildlife Refuge) is over ten miles north of the site.

Water Resources

Direct and indirect impacts on water resources would result from the Proposed Action. These impacts were evaluated using models for infiltration and groundwater flow and transport.

Surface water impacts would result from surface disturbances related to the proposed mining activities within the Reese Canyon Creek, West Fork of Sheep Creek, and No Name Creek drainages. These disturbances would produce increased sediment loads which would be controlled by sediment collection basins, silt fences, sediment traps, concurrent reclamation of disturbed areas, and other Best Management Practices.

Overburden would be removed from the open pits and sequentially backfilled into the pits and covered with an engineered vegetative cover. The backfill would be subject to infiltration of precipitation and snowmelt. This infiltration of meteoric water would dissolve soluble chemical constituents from the overburden as it passes downward through the material. Column leach tests of the overburden have indicated that certain chemical constituents are likely to be leached

from the overburden in concentrations that are above the applicable groundwater or surface water standards. Based on geochemical testing, the constituents of potential concern (COPCs) in groundwater include total dissolved solids (TDS), sulfate, aluminum, antimony, cadmium, manganese, and selenium. COPCs in surface water include cadmium, nickel, selenium, and zinc. Selenium, aluminum, and cadmium would not exceed any groundwater standards outside the lease boundary.

The seepage would travel 400 feet through unsaturated rock from the bottom of the backfilled pit to the water table in the Wells Formation regional aquifer. As the seepage percolates downward through the unsaturated bedrock, attenuation reactions such as precipitation and adsorption, driven by changes in pH and lack of exposure to air would reduce the concentration of COPCs. The seepage would reach the water table where it would be diluted and possibly further attenuated by chemical reactions as it flows downgradient northwest in the Wells Formation aquifer.

Groundwater modeling of the impacts from seepage into the Wells Formation indicates that a groundwater mound would develop in the regional aquifer due to increased recharge from runoff into the partially backfilled pit. A manganese plume (within which concentration would exceed the applicable groundwater standard) would extend about 3,000 feet northwest of the lease boundary. Concentrations of antimony, sulfate, and TDS in groundwater would exceed Idaho groundwater standards inside the lease boundary, but would not exceed applicable standards outside the lease boundary. The Idaho groundwater standard for antimony is based on human health considerations. Groundwater standards for sulfate, TDS, and manganese are based on aesthetic qualities which do not impact human health. The Wells Formation aquifer does not appear to be connected to any surface springs or water bodies within the study area, and therefore the water quality impacts to the Wells Formation would not affect surface water quality. Two wells in the area (over 2 miles west of Rasmussen Ridge) provide domestic water. The manganese plume is not expected to affect those wells nor to pose an impact to human health.

Flow rates in surface streams, seeps, and springs would decrease during mining, as the open pits collect surface water runoff and shallow alluvial groundwater that would have reported to stream drainages. After mining, runoff from the fully backfilled pit areas would be restored, although the partially backfilled pit would continue to intercept surface runoff and shallow alluvial groundwater that would have reported to surface streams, seeps, and springs.

Watershed and Soils

The Proposed Action and alternatives would have direct and indirect impacts to the soil resources within the North Rasmussen Ridge Mine area. Soil resources outside the North Rasmussen Ridge Mine area would not be directly affected. The proposed mine expansion Panels A and B includes open-pit mining, overburden disposal as backfill, temporary storage areas for growth media, and storm water retention ponds. These facilities would result in 269 acres of disturbance, of which 197 acres would be reclaimed. The growth media storage area is expected to contain up to 918,000 cu yd of the 1,015,716 cu yd of salvaged growth media. The Proposed Action would place all overburden produced from mining processes in the unbackfilled

portions of the existing Central Rasmussen pit and the mined-out areas of the North Rasmussen pits as areas become available, eliminating the need for external waste rock dumps. Potential direct impacts on soil resources and watersheds in the project area include loss of soil during soil salvage and replacement, loss of sediment through erosion, exposure and mobilization of selenium, and reduced soil productivity. Indirect impacts on soil resources include degradation of water quality related to erosion or selenium in sediment and reduced success of vegetation related to soil fertility. Impacts from erosion are expected to be minimal as a result of the proposed BMPs and reclamation outlined in the North Rasmussen Ridge Supplemental Mine and Reclamation Plan. Loss of soil fertility within the project area could be reduced using BMPs by incorporating slash into the salvaged growth media to increase the organic matter content, mixing soils with few coarse fragments with soils that contain a higher content of coarse fragments to dilute the total percentage of coarse fragments, and timing salvage operations to optimize revegetation.

Existing watershed conditions would be modified by implementation of the Proposed Action because of the two stream diversions to prevent water from entering where portions of the pit would intercept natural flow during mining. The stream diversions would be temporary, and the culverts would be removed after mining and new stream channels would be constructed at the locations of the culverts. Impacts to the watersheds that result from the Proposed Action are expected to have minimal effects of sediment loss and erosion processes in the Blackfoot River Basin. Use of BMPs, water management, and concurrent reclamation of disturbed areas in accordance with the North Rasmussen Ridge Supplemental Mine and Reclamation Plan would control sediment yield to the six sub-watersheds.

Vegetation, Riparian Areas and Wetlands

Under the Proposed Action, 269 acres of vegetation would be altered, including 193 acres of conifer, 69 acres of mixed aspen/conifer, and 8 acres of sagebrush. No wetlands or riparian areas would be directly affected. All disturbed areas that are amenable to reclamation would be reclaimed. Of the 269 disturbed acres, 197 acres, or 73 percent of the disturbed area, would be reclaimed. Reclamation would include backfilling the pits with overburden, covering it with a minimum of 8 to 10 feet of non-seleniferous limestone and chert, and 2 to 3 feet of growth media. Reclamation would result in a shift in the plant community from aspen/conifer and sagebrush communities to a community initially dominated by grasses. With time and research, management may change and require other species mixes. Natural succession would also continue, so other species including trees and shrubs may invade the reclaimed area. Impacts to native and planted vegetation from uptake of selenium are not likely to be substantial because of the high toxicological thresholds and planned BMP actions.

The pits may intercept some groundwater flow in the shallow alluvium that may indirectly affect some wetland areas in upper Reese Canyon, No Name Creek and the West Fork of Sheep Creek during mining. After mining ends, the shallow alluvial flow would be restored by constructing channels of impervious material across the top of the backfilled pit to allow surface flows to reenter the drainages, however, groundwater flow in shallow alluvium may be altered to the northeast of the pit. Some wetlands may lose a portion of their water supply.

Noxious weeds may become established from ground disturbance under the Proposed Action, but existing monitoring and control programs would be maintained until reclamation is complete.

Terrestrial Wildlife

The Proposed Action would disturb wildlife habitat during construction and mine operations. Wildlife mortalities and injuries to ground and tree nesting species would occur during ground clearing and construction. Mortalities and injuries to wildlife may also occur during operations as a result of accidental collisions with vehicles. Potential effects to wildlife would also include loss of habitat and potential effects from exposure to selenium. The Proposed Action would affect 269 acres of wildlife habitat; the majority would be restored to habitat initially dominated by perennial grasses, with limited trees and shrubs, after mining operations end. It is planned to replant trees and shrubs during reclamation, some by bucket plantings and some as seedlings. Wildlife habitat would not be restored to its original condition within the proposed project disturbance footprint for many decades.

Long-term impacts to wildlife resources that would result from exposure to selenium are possible as the result of the Proposed Action. The use of at least 8 to 10 feet of non-seleniferous overburden material along with 2 to 3 feet of growth media is expected to limit the potential for uptake of selenium through the food chain once mineral extraction is completed.

Fisheries and Aquatic Resources

Potential impacts to aquatic wildlife and fisheries in the study area include changes in habitat quality and quantity and effects from exposure to selenium. There is also the potential for downstream aquatic habitat and fisheries to be affected by the Proposed Action. Selenium may affect fisheries through discharges to springs which have source areas intercepted by the pit. Potential direct impacts to aquatic life and associated habitat under the Proposed Action, including increased sedimentation, decreased water supply, and exposure to selenium, are expected to be limited. The Storm Water Pollution Prevention Plan has been developed to limit the potential for mine-related erosion and sedimentation.

Long-term impacts to aquatic resources resulting from exposure to selenium may occur as the result of the Proposed Action. Selective placement of seleniferous material and a cover of non-seleniferous materials, along with implementation of stormwater BMPs, are expected to limit the potential for selenium uptake through the food chain.

Threatened, Endangered and Special Status Species

Baseline studies indicated that the study area supports potential habitat for a number of threatened, endangered, and special status plant and wildlife species. However, the study area is occupied by only a few of these species. The potential direct and indirect impacts to these species are similar to the impacts to terrestrial wildlife and fisheries and aquatic resources that have already been discussed. Species that are higher on the food chains that are included in the list (such as the wolverine, cutthroat trout, and boreal owl) may be subject to adverse impacts from selenium via bioaccumulation and biomagnification from prey species with high

concentrations of bioaccumulated selenium. However, biotoxic levels of selenium are considered unlikely. These adverse impacts would occur only if the higher-level species feed within the study area or feed consistently on prey species with high concentrations of selenium. Additionally, two of the three plant species listed by the USFS as sensitive may occur within the study area. The study area was considered marginal habitat for the bald eagle, boreal owl, gray wolf, wolverine, and lynx.

Concentrations of selenium in the potentially affected water bodies in the area ranged from less than the practical detection limit of 0.001 to 0.004 mg/L, and were just below the state water quality standard for aquatic life of 0.005 mg/L. There is a potential for the concentrations of selenium to cause adverse direct impacts to various species of aquatic life. Potential adverse indirect impacts caused by bioaccumulation and biomagnification in the aquatic food chains may cause adverse direct impacts to waterbirds that feed in or raise young in these water bodies. Based on the historical trend of increased phosphate mining and elevated levels of selenium in the Blackfoot River, concentrations of selenium in the surface waters and sediment of the Blackfoot River watershed can be expected to increase and result in potentially adverse effects to aquatic life and possibly to waterfowl.

Impacts to terrestrial species may occur via uptake of selenium in plant forage and prey animals. Additionally, seeps, springs, and creeks that serve as sources of food and drinking water may become contaminated from surface water runoff and leaching of selenium to underlying groundwater. However, the use of at least 8 to 10 feet of non-seleniferous overburden material along with 2 to 3 feet of growth media is expected to limit the potential for exposure to selenium through the food chain.

Habitat loss would also play a role in the loss or change of the food chain cycle specific to this area. Raptors such as northern goshawk, flammulated owl, and the three-toed woodpecker may be lost in this area, due to the majority of the affected habitat under the Proposed Action being restored to a habitat type that would represent a change from conifer, mixed aspen/conifer, and sagebrush communities to habitat that would be initially dominated by perennial grasses.

Grazing Management

The Rasmussen Valley Cattle Allotment and the Sheep Creek Sheep Allotment would be affected by the development of phosphate minerals in North Rasmussen Ridge. The Proposed Action would result in the loss of existing vegetation by clearing areas that would be needed to support mining operations, although grazing has already been suspended on the mining leases. Reclamation would involve at least 8 to 10 feet of non-seleniferous overburden and 2 to 3 feet of growth media placed over the seleniferous waste rock. This reclamation plan would reduce the likelihood that selenium would accumulate in vegetation. Disturbed areas would be reclaimed using a seed mixture mainly composed of grasses with shallow roots that would also reduce the potential for accumulation of selenium. The potential exists for the spread of noxious weeds in new disturbance areas that could result in a decline in the quality of grazing allotments. The existing plan of monitoring and treating areas of weeds would continue and is expected to contain or reduce the infestations.

Recreation

The potential effect to recreation from the Proposed Action has two aspects: one is related to the amount of opportunity for recreation that would be created by the proposed project, and the second is the opportunity that is removed from recreational use. Local residents in Caribou County value forested land for recreation in part because of the proximity to their homes. The main issue is the potential change in access to recreational opportunities in the analysis area. Potential effects on existing recreational uses, primarily hunting, from any change in access opportunities on forest roads is expected to be minor, as there would be no additional road closures.

Visual Resources

For any of the alternatives, the adjacent hilly terrain would limit public views of the proposed visual modifications. Visitors to the area are low in number. Visual effects could include alteration of the physical setting and visual quality of the landscape and effects to the landscape as experienced from sensitive viewpoints, including travel routes and recreational use areas. These visual effects would occur at the North Rasmussen Ridge Mine under the Proposed Action. The proposed mining operations on National Forest lands would comply with the Caribou National Forest Land and Resource Management Plan (USFS 1985). The Visual Quality Objectives (VQOs) for USFS lands in the study area would be met by implementation of any of the alternatives. The VQOs for the study area are considered modification or maximum modification. These VQOs allow the greatest modification of the landscape, including management activities that dominate the original characteristic landscape. These VQOs would be appropriate for large-scale mining operations.

Land Use, Access and Transportation

No changes in surface or mineral ownership would be associated with any of the alternatives. Implementation of any of the alternatives would be consistent with the existing land use planning and management guidelines for federal- or state-administered mineral leases.

Implementation of the Proposed Action would result in a change of existing land uses by surface disturbances associated with expansion of the existing mining operations and temporary closure to public access in the North Rasmussen Ridge Mine area. Rangeland used for livestock grazing was the primary existing land use within the area of the proposed mine expansion, however, this area has been closed to grazing because of mining exploration activities. For the Proposed Action, most of the disturbed areas would be reclaimed, resulting in minimal long-term effects to land use. After the North Rasmussen Ridge Mine area has been reclaimed, vegetation and public access would be restored and land uses such as grazing would be reestablished.

For the Proposed Action, the potential effects to public access and traffic volume on existing transportation facilities would be unchanged from the current conditions for the existing Central Rasmussen Ridge Mine. Dust suppressants such as magnesium chloride would be used as needed on project-related roads. The potential effects of fugitive dust from project-related vehicular

traffic on roads and vehicular emissions associated with the Proposed Action would not substantially increase over the existing conditions.

Cultural Resources and Native American Concerns

The entire area of potential effect of the Proposed Action and the alternatives has been inventoried for cultural resources. No eligible cultural resources have been found in the project area. The North Rasmussen phosphate occurs in the Meade Peak Member of the Phosphoria Formation, which is overlain by the Rex Chert Member of the same formation. Chert and porcellanite facies of the Phosphoria Formation farther east in the Bighorn and Pryor Mountains produce distinctive cherts and porcellanites that were highly valued by prehistoric populations as raw material for manufacture of stone tools. Cultural resource inventories in the project area have not identified any culturally modified Phosphoria chert or porcellanite. Evidently, the chert and porcellanite in these deposits that was reasonably accessible to primitive technology was not of adequate quality to be attractive.

Social and Economic Conditions

Agrium proposes to use the same size of work force to develop the North Rasmussen Ridge Mine to provide continuous production to its Conda fertilizer plant. The viability of Agrium's production plant depends on procuring a uniform, constant supply of ore that is of adequate quantity and quality. The most notable impact of the proposed mine expansion would be to extend existing employee needs for housing and services in the area another 8 or more years. Extension of the mine would also result in a continuous cash flow from mining into the southeast Idaho economy from payrolls, purchases, and contracting of services as well as royalties to the federal government that are returned to the state and county. In addition, government tax receipts generated from income, property, sales, mine license tax, and other taxes from the mine and employees to city, state, and county governments would continue during the additional 8 or more years that the mine would operate.

Environmental Justice

On February 11, 1994, Executive Order 12898, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations" was published in the *Federal Register* (59 FR 7629). The order requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The Proposed Action is an expansion of an existing facility that is surrounded by National Forest System lands and would not affect any area of low-income housing or low-income populations.

The U.S. Census identified 714 residents, or 9.6 percent of the total population, that lives below the poverty level in the urban areas of Caribou County. Residents who live below the poverty level were not identified for rural areas between Soda Springs and the Rasmussen Ridge mining area. The proposed project is on federal and state leases and is not located within the corporate limits of any urban community or in any populated rural area. The Proposed Action would not affect any area that contains populations who live under the poverty level.

The population of Caribou County is predominantly Caucasian (96 percent, according to the 2000 Census). The Hispanic population accounted for 4 percent. Other minority groups in Caribou County constitute a small percentage of the total population. No areas were identified in the county that consisted of predominantly minority populations. The Proposed Action therefore would not disproportionately affect minority populations.

Hazardous Materials

The annual use and handling of hazardous materials and wastes would be the same as existing operations at the Central Rasmussen Ridge Mine for any of the alternatives. However, the duration of the handling period for hazardous materials and wastes would be approximately 8 years longer for the Proposed Action than for Alternative 2 (No Action). The types of hazardous materials and wastes, storage locations, and estimated quantities to be used and stored for any of the alternatives are provided in **Table 2.2-6**. Hazardous materials and wastes would continue to be transported along the same route that is currently used for the existing Central Rasmussen Ridge Mine.

As discussed in Section 2.2.3.6, mining associated with any of the alternatives would comply with federal and state regulations for hazardous materials and wastes and with the existing approved Storm Water Pollution Prevention Plan (SWPPP, Agrium 2001). BMPs for the pollutants with the potential to be released from the site (sediment, storm water runoff, fuels, and oils), and the Spill Prevention Control and Countermeasures Plan (SPCC) for the mine are incorporated in the SWPPP document. No significant fuel spills or leaks have occurred during operation of the existing mine facilities (Agrium 2001).

For all alternatives, the types and quantity of wastes generated and the transportation and disposal procedures would be the same as are currently used at the Central Rasmussen Ridge Mine. The mine is currently considered a small-quantity generator because less than 100 kilograms of hazardous waste (solvents) are generated per month. Used engine oil is stored on site and then is sent to a recycling company located in Pocatello, Idaho.

Mining overburden and waste rock are exempted from hazardous waste regulations under the Bevill amendment to the Resource Conservation and Recovery Act of 1976.

Alternative 1 – Proposed Action with Impermeable Capping of Backfill Areas

Minerals, Topography, Geology and Paleontology

Potential effects from this alternative would be essentially the same as for the Proposed Action, but with the additional disturbance of 26 acres for the external waste rock dump and 25 acres for a clay source, if clay is used as a cap material.

Air Resources

Potential effects from this alternative essentially would be the same as for the Proposed Action, but with potentially greater amounts of fugitive dust from construction of an external waste dump and hauling materials to construct the impermeable cap. The additional fugitive dust would also be within NAAQS, as calculated with EPA standard emission factors.

Water Resources

Alternative 1 would result in impacts to water flow and quality similar to those described for the Proposed Action. However, the groundwater mound in the Wells Formation regional aquifer would be slightly smaller, because less infiltration would move through the fully backfilled panels. Since the partially backfilled pit would not be capped, the manganese plume for Alternative 1 would be almost identical to that of the Proposed Action. Concentrations of antimony, sulfate, and TDS in groundwater would exceed Idaho groundwater standards inside the lease boundary, but would not exceed applicable standards outside the lease boundary.

Flow rates in surface streams, seeps, and springs would decrease during mining, as the open pits collect surface water runoff and shallow alluvial groundwater that would have reported to stream drainages.

Watershed and Soils

Alternative 1 would result in an additional 26 to 51 disturbed acres of soil compared with the Proposed Action because of the decreased volume available in the Central Rasmussen backfill area that would result from the need to design the slopes at a shallower 4.0h:1.0v slope. Production of backfill would eventually equal mining production, which would require an external waste dump outside of the perimeter of the pit, in the Angus Creek sub-watershed.

The effects of Alternative 1 on watersheds would be similar to the Proposed Action, with the exception of a minor increase in local erosion from the additional disturbance and the presence of a waste rock dump and additional acreage associated with a clay pit for capping materials. Erosion would be slightly greater because of the external waste rock dump.

Vegetation, Riparian Areas and Wetlands

Potential impacts under Alternative 1 would be similar to the Proposed Action. Alternative 1 would involve construction of an impermeable cap between seleniferous waste and the non-seleniferous limestone and chert overburden. An impermeable cap would further reduce the potential for uptake of selenium by deep-rooted vegetation and the potential for water to infiltrate through seleniferous materials. A 4.0h:1.0v slope would be used to construct the cap under Alternative 1, which would in turn reduce the total storage capacity and increase the disturbance footprint of the open pit. Alternative 1 would require construction of a waste rock dump to compensate for the reduced storage capacity. The overall disturbance footprint of the open pit

under Alternative 1 would be increased by 26 acres. Additional disturbance would also be associated with construction of the waste rock dump and clay pit under Alternative 1.

Terrestrial Wildlife

Potential impacts to wildlife would be similar to the Proposed Action. An additional 26 acres of habitat and the area associated with the clay pit would be lost in the short term under this alternative.

Fisheries and Aquatic Resources

Potential impacts to aquatic resources would be similar to the Proposed Action.

Threatened, Endangered or Special Status Species

Alternative 1 would further reduce the potential for exposure to selenium by threatened, endangered, and sensitive plants and wildlife by installing an impermeable cap over the backfilled materials. Otherwise, potential impacts to these species would be similar to the Proposed Action.

Grazing Management

Alternative 1 would increase the acreage subject to accumulation of selenium in vegetation in the area of the external waste rock dump.

Recreation

Potential effects on recreation would be the same as were described for the Proposed Action with exception to the disturbance caused by the external waste rock dump and clay pit.

Visual Resources

Potential effects to visual resources for this alternative would be similar to the Proposed Action. Construction of a 26-acre external dump under this alternative would create a west-facing slope that would be an additional intrusion of line and color, but that would still comply with the VQOs for the area. Additional disturbance would be associated with the clay quarry and road.

Land Use, Access and Transportation

Potential effects to land use, access, and transportation for this alternative would be the same as for the Proposed Action with exception to the disturbance associated with the external waste rock dump and clay pit.

Cultural Resources and Native American Concerns

There would be no potential effects under this alternative, as was described for the Proposed Action.

Social and Economic Conditions

Potential effects on social and economic conditions of the study area essentially would be the same under this alternative as under the Proposed Action. Cost of the impermeable cap would be approximately \$20.5 million more than the Proposed Action, and a clay cap would cost approximately \$9.7 million more than the Proposed Action.

Environmental Justice

Factors that could affect Environmental Justice under Alternative 1 would be the same as for the Proposed Action.

Hazardous Materials

Potential effects from hazardous materials under Alternative 1 would be the same as under the Proposed Action.

Alternative 2 – No Action

Minerals, Topography, Geology and Paleontology

Three primary impacts are associated with Alternative 2 – No Action. First, recoverable phosphate resources in the North Rasmussen Ridge area would not be committed to development at this time. Second, without these phosphate resources, it would require additional mining elsewhere to supply the current demand. Third, reclamation plans for the Central Rasmussen Ridge Mine pit area would change. The pit would not be backfilled, resulting in a 35-acre pit with residual highwalls and exposing earth materials that contain concentrations of selenium and other elements to weathering processes. The exposure of materials containing selenium or other elements would increase the potential for release of these constituents into surface waters or soils. The release of selenium or other elements into the environment for subsequent uptake by plants or animals could have adverse effects on plant or animal life.

Air Resources

The No Action alternative would not create any impacts to air resources beyond the effects already analyzed for the Central Rasmussen Ridge Mine. These emissions were analyzed previously and approved (BLM and USFS 1997b).

Water Resources

The No Action alternative would result in no backfill of the last pit in the Central Rasmussen Ridge Mine area. This would allow infiltration of water through the pit bottom that would impact groundwater in a similar manner as that projected for North Rasmussen. No backfill of this area may result in a pit lake.

Watershed and Soils

The No Action Alternative would not result in any increase in disturbance in the North Rasmussen Ridge area beyond the level already permitted for the Central Rasmussen Ridge Mine; however, no action would render the economically recoverable mineral resource unusable and the Central Rasmussen Ridge pit would not be backfilled, resulting in the potential for a pit lake to form. Mining would continue in the Central Rasmussen Ridge Mine, resulting in 231 acres of disturbance, of which 196 acres would be reclaimed.

Vegetation, Riparian Areas and Wetlands

No additional impacts to vegetation communities would occur under the No Action Alternative beyond the effects already projected for the Central Rasmussen Ridge Mine. Infestations of noxious weeds would be expected to remain as at present or be reduced by the existing BMPs for monitoring and control.

Terrestrial Wildlife

No additional impacts to wildlife would occur under this alternative beyond the effects already described for the Central Rasmussen Ridge Mine.

Fisheries and Aquatic Resources

No additional impacts to fisheries and aquatic resources would occur under the No Action alternative beyond the effects described for the Central Rasmussen Ridge Mine. There is potential for a lake to form in the Central Rasmussen Ridge pit and alter the hydrologic regime in the local streams over the long term.

Threatened, Endangered or Special Status Species

No additional impacts to threatened, endangered or sensitive species would be expected under this alternative beyond the effects already evaluated for the Central Rasmussen Ridge Mine.

Grazing Management

The reduction in grazing lands projected by the Proposed Action and Alternative 1 would not occur under this alternative. There would be no additional loss of grazing areas beyond the level already described for the Central Rasmussen Ridge Mine.

Recreation

There would be no change in recreation opportunities under this alternative beyond the effects already described for the Central Rasmussen Ridge Mine.

Visual Resources

Potential impacts to visual resources were considered acceptable and in compliance with the VQOs for the Proposed Action and Alternative 1. Some minor effects to visual resources would still occur at the Central Rasmussen Ridge Mine under this alternative, but were previously analyzed and approved.

Land Use, Access and Transportation

The No Action alternative would not change land use or result in road closures or access, or change vehicular use of roads beyond the existing conditions.

Cultural Resources and Native American Concerns

There would be no effects on these resources under the No Action Alternative.

Social and Economic Conditions

If the No Action Alternative was selected, mining at Central Rasmussen Ridge Mine would cease in 2003, with an associated drop in employee numbers. The Mine currently employs 400 people. Some of the employees laid off might find employment with other mining companies in the area, but most would leave the community to search for work elsewhere. A reduction in population would have indirect effects on local needs for housing and services, local purchases, and property and sales taxes. The Mine would also reduce their payrolls, local purchases, and tax and royalty payments to local, state, and federal governments.

Environmental Justice

Factors that affect Environmental Justice under the No Action Alternative would be the same as for the Proposed Action.

Hazardous Materials

There would be no potential effects from hazardous materials under the No Action Alternative; however, potential effects would continue at the Central Rasmussen Mine until mining ceases in 2003 or 2004.