

## SUMMARY

In February 2006, Graymont Western US, Inc. (Graymont) submitted a proposal to the U.S. Department of the Interior, Bureau of Land Management (BLM) and the Montana Department of Environmental Quality (DEQ) to amend BLM Plan of Operations MTM 78300 and Montana Metal Mine Reclamation Act Operating Permit No. 00105 to include a life-of-mine expansion of limestone and dolomite mining operations at the Indian Creek Mine (Mine) located approximately 4 miles west of Townsend, Montana (**Figure S-1**). The proposed mine expansion would result in a continuation of Graymont's existing operations in the Limestone Hills. Graymont (formerly Continental Lime Inc.) produces calcium oxide (quicklime and lime), hydrated lime, and other lime products at the Mine.

The proposed mine expansion property is located within the boundaries of the Limestone Hills Training Area (LHTA), a military training facility operated by the Montana Army National Guard (MTARNG) under a right-of-way issued by BLM. A Memorandum of Agreement between MTARNG, Graymont, and BLM sets forth the policies and procedures agreed to by MTARNG regarding military training exercises; clearing of unexploded ordnance (UXO); exploration, mining, and reclamation activities conducted by Graymont; and, administration of public land by BLM to allow joint and compatible use of the Limestone Hills Training Area.

This Draft Environmental Impact Statement (EIS) describes Graymont's Proposed Action, alternatives to the Proposed Action including Alternative A – Modified Pit Backfill, and the No

Action Alternative. Potential direct, indirect, and cumulative effects on the environment are analyzed in this Draft EIS. Impacts described herein will form the basis for a BLM and DEQ decision regarding the Proposed Action, Alternative A, No Action Alternative, and selection of appropriate mitigation measures. This Draft EIS describes potential impacts on public land and private land that could result from decisions by BLM and DEQ.

## SUMMARY OF PROPOSED ACTION

The proposed amendment would expand the existing permit boundary to encompass approximately 1,940 acres of additional public land currently administered by BLM and represents approximately 50 years of mine production including 15 years of currently permitted mine life. Proposed mine expansion would include quarry areas, mine facilities, ore storage sites, soil salvage stockpiles, haul roads, and overburden disposal areas.

Graymont proposes to extend mine operations approximately 2.5 miles south beyond the existing permit boundary into the South Claims Area and eastward into the Dolomite Claims Area adjoining the northeast corner of the existing mine permit boundary. Proposed mining disturbance areas for the life-of-mine expansion lie within a disturbance boundary of 1,313 acres (968 acres in the South Claims Area and 345 acres in the Dolomite Claims Area). Actual surface disturbance for mine activities within the disturbance boundary would be less than the permitted disturbance to allow flexibility for mine planning.

## MINE PITS

Mining activities would continue in the same manner as current operations. Limestone and dolomite would be removed in layers or “benches” approximately 20 feet thick. As mining progresses downward on the deposit, safety rock catch benches would be constructed to a minimum width of 20 feet. These catch benches would be established at vertical intervals ranging from 20 to 60 feet in height. Ramp roads within the quarry would connect successive benches to provide truck and loader access.

Overburden would be removed by drilling, blasting, and loading into trucks for placement in overburden disposal areas located along the west boundary of the mine, or as backfill in portions of mine pits depleted of recoverable limestone or dolomite. Overburden would be placed so as not to obstruct any major drainage outside the mine area. Final grading would re-establish contoured slopes ranging from 2.0H:1.0V to 3.0H:1.0V to provide landscape diversity. Consistent with currently permitted mining operations, up to 50 percent of the overburden would be placed as in-pit backfill.

New surface disturbance associated with proposed mine pit development would total 557 acres (343 acres in the South Claims Area and 214 acres in the Dolomite Claims Area). Overburden disposal outside of mine pits would total about 100 acres (approximately 65 acres in the South Claims Area and 35 acres in the Dolomite Claims Area).

Soil and/or growth media would be removed from proposed pit areas, areas outside existing mine pits designated for overburden disposal, and haul roads. Soil would be stockpiled and seeded for future use in reclamation. Temporary haul roads would be constructed to access overburden disposal areas as mining progresses.

## REJECT ROCK

Reject rock resulting from the ore crushing operation consists of limestone or dolomite fines that pass a ½-inch screen. Reject rock created during processing of limestone mined in the South Claims Area would be placed along the west side of the mine area south of a new crusher site or in portions of mined-out pits. Reject rock from processing dolomite would be stored in the existing limestone reject pile in the North Claims Area. Approximately 5 million tons of reject rock may be placed in proposed disposal areas (outside of mine pits) over the mine life.

## ORE PROCESSING

Limestone ore mined from the South Claims Area would be transported to a new crusher site constructed north of the reject rock disposal area. Crushed/screened limestone ore would be transported via haul truck to the existing crusher site and conveyed to the kilns located north of Indian Creek at the plant facility.

Limestone ore is initially heated to a temperature of about 1,800° F and fed to one of two rotary kilns where it is heated to temperatures between 2,200° and 2,500° F for a period of 2½ to 3 hours. The heating action converts the limestone ( $\text{CaCO}_3$ ) to lime ( $\text{CaO}$ ). After the lime reaches the discharge end of the kiln, it is cooled and conveyed to one of several storage silos. Product lime is then loaded into trucks for transport to the rail terminal or directly to consumers.

Approximately 40,000 tons of coal and 30,000 tons of coke are used annually as the energy source to heat and process lime at the Indian Creek Mine. Each kiln circuit is equipped with a baghouse to capture particulates from kiln emission exhaust, lime handling, and unloading.



H:\13532 Graymont\EIS\5000 GIS\Projects\EIS\Fig. S-1\_Summary.mxd



U.S. Department of the Interior  
Bureau of Land Management  
Butte Field Office  
Butte, Montana

**GENERAL LOCATION**  
**Indian Creek Mine Expansion - Environmental Impact Statement**  
**Broadwater County, Montana**

**FIGURE**  
**S-1**

Each kiln can produce 500+ tons of lime (also known as quicklime) per day and requires approximately 320 tons of coal and/or coke per day. A stockpile of approximately 15,000 tons of coal/coke is maintained on-site.

## **KILN DUST**

Kiln dust is produced during the ore processing circuit and collected in baghouses. Lime kiln dust collected in the baghouse is sold for various applications. Kiln dust is produced at an approximate rate of 7 percent of production (currently 50 tons per day/18,250 tons per year). Kiln dust is stored on-site in a 150-ton silo. At the present time, all kiln dust is sold out of the silo as it is produced.

## **UNEXPLODED ORDNANCE (UXO)**

Most of the proposed South Claims Area is within designated Surface Danger Zones and may contain UXO. The Right-of-Way and the Memorandum of Agreement between BLM, Graymont, and MTARNG requires MTARNG to remediate UXO in the proposed joint use area. The Army has previously been able to clear about 25 acres per year. However, that rate of clearance has increased with an additional 84 acres released in early 2008. MTARNG currently estimates that UXO clearance in the existing mine permit area (North Claims Area) will be completed by 2010, if funding remains available at current levels. Expansion of mine operations into the South Claims and Dolomite Claims areas would increase the area requiring UXO remediation by about 1,300 acres. At the present time, MTARNG is unable to provide an estimate of the time and effort necessary to provide UXO clearance in these areas.

## **SOIL SALVAGE**

Site preparation in the South Claims and Dolomite Claims areas would include UXO clearance and clearing and grubbing vegetation from proposed disturbance areas. Prior to commencing mining activities, soil and other growth media would be salvaged and either spread over areas undergoing reclamation or placed in designated stockpile areas.

## **ANCILLARY FACILITIES**

Existing support facilities at the Indian Creek Mine would be used over the life of the Project. The new crusher site in the South Claims Area would have an office building housing a change/lunch room and maintenance shop, a septic system, and well. An aboveground storage tank for diesel fuel would also be located on the site.

Construction of the new crusher in the South Claims Area would require installation of electrical service to the site. Graymont would construct a power line from the existing crusher site in the North Claims Area to the new crusher site in the South Claims Area along the North-South Haul Road corridor.

Other ancillary facilities would include storm water diversion ditches and sediment ponds, water fill stations, and growth media stockpiles. Growth media stockpiles would be located throughout the Project area.

## **RECLAMATION**

Reclamation activities would include regrading overburden disposal areas, placing up to 50 per cent of overburden in mined-out pit areas,

removing structures after cessation of operations, regrading disturbed areas (including roads), establishing drainage control, removing and regrading stockpile areas, replacing salvaged growth media, revegetation, and monitoring reclamation and surface water diversion control. Natural regrade techniques would be used to blend with surrounding topography wherever possible. The reclamation schedule would span the period between cessation of mining through establishment of a sustainable vegetation cover. Reclamation would take place concurrently with mining operations, where possible.

## **SUMMARY OF IMPACTS**

Analysis of potential impacts and mitigations associated with Graymont's proposed mine expansion Project is presented in Chapter 3 – *Affected Environment and Environmental Consequences*. The following is a summary of potential impacts, by resource that could result from implementation of the Proposed Action and No Action Alternative.

### **PROPOSED ACTION**

#### **AIR QUALITY**

Mining-related activities at the Indian Creek Mine would be a source of particulate and gaseous air pollutants. Fugitive dust emissions would be generated by mining, loading, hauling, and crushing limestone, and disposal of overburden. Particulate emissions would be mitigated by minimization of drop heights during loading, dust suppression and other Best Management Practices. Gaseous pollutant emissions would result from blasting, construction and mining equipment exhaust, vehicle exhaust, and from burning coal/coke during limestone processing. These emissions would be minimized by proper equipment maintenance and operation.

## **GEOLOGY AND MINERALS**

Proposed mining in the South Claims Area (mine expansion area) is projected to produce less overburden (geologic material considered waste that overlies the ore) compared to current mining in the North Claims Area. Exploration drilling in the South Claims Area has indicated a ratio of approximately 1:4 of overburden to ore production. Approximately 13 million tons of overburden would be removed to recover approximately 55 million tons of ore. Mining would occur on 11,500 linear feet of outcrop in the South Claims Area. Ore and overburden production in the Dolomite Claims Area is expected to be at a 1:1 ratio – 20 million tons ore and 20 million tons overburden.

No quarries or vertebrate fossils are located in the area to be physically disturbed by the Proposed Action; therefore no impacts to paleontological resources have been identified.

## **WATER QUANTITY AND QUALITY**

### **Surface Water**

No surface water rights are located in the South Claims or Dolomite Claims areas.

Flow from springs in the Project area would not be affected by the Proposed Action. Five year-round or intermittent flowing springs are located at least 1,000 feet from any proposed disturbance.

Suspended sediment would be of concern in surface water run-off from the Project Area. Concentrations of metals in samples of ore and overburden were analyzed in 2004. Results for 21 trace elements showed non-detectable concentrations or concentrations within typical

ranges found in soil. The ore rock is limestone and dolomite; therefore, acid mine drainage at this site and associated increased concentrations of metals are not expected.

Analysis of surface water samples indicate that Indian and Crow creeks have good water quality downstream from the Indian Creek Mine. No aquatic life standards are known to have been exceeded in surface water samples collected in the vicinity of the Indian Creek mine site. Some iron concentrations in Crow Creek and Mud Spring have exceeded secondary (aesthetic) standards. Concentrations of arsenic, cadmium, copper, lead, mercury, and zinc have exceeded aquatic life and/or human health standards in samples from upper Indian Creek upstream from the Indian Creek Mine. These values are influenced, in part, by abandoned or inactive mine sites (Park, St. Louis, and Diamond Hill) within the Indian Creek drainage upstream from the Indian Creek Mine.

### **Groundwater**

Proposed mine expansion in the South Claims Area would have no adverse effect on groundwater quantity, including flow from springs. Based on exploratory drilling observations, groundwater typically is not encountered within about 500 feet of ground surface.

In the Dolomite Claims Area, the northern-most mine pit would eventually extend below the groundwater level. The pit bottom is projected to extend to an ultimate elevation of about 4,070 feet, which is 155 feet below the groundwater level elevation in the nearby National Guard Well (water right no. 411 30000180) of 4,225 feet (Hydrometrics 2007). The pit bottom is projected to be 45 feet below the total depth of this well (elevation 4,115). For the southern-most mine pit proposed in the

Dolomite Claims area, the ultimate pit bottom elevation would be approximately 4,265 feet, which is about 40 feet above the water level measured in the National Guard Well.

The National Guard Well is located approximately 400 feet southwest of the northern-most mine pit and within the proposed permit boundary. The well is used for stock watering during spring, summer, and fall. The deepest part of the north mine pit in the Dolomite Claims Area would be approximately 45 feet below the bottom of the National Guard Well. Pit dewatering, if required, may adversely impact the well by lowering the groundwater level in the vicinity of the well, possibly to a depth below the current pumping level or below the bottom of the well.

The north mine pit in the Dolomite Claims Area would eventually be backfilled with overburden. Backfilling this pit would eliminate formation of a body of surface water (*i.e.*, pit lake).

### **SOIL**

The proposed mine expansion would result in approximately 1,313 acres of surface disturbance including the mine pit and overburden disposal areas, haul roads, growth media (geologic material that is not topsoil but would support vegetation) stockpiles, and continued exploration activities. Potential impacts to soil resources include loss of soil during salvage and replacement, soil loss in stockpiles due to wind and water erosion, and reduced biological activity and soil structure. These impacts would be reduced by direct hauling growth media from active mine areas for placement over backfilled portions of previously mined areas or overburden disposal facilities, eliminating the need to stockpile growth media. Graymont would perform

reclamation activities concurrently with ongoing mining operations where practicable. As mining operations progress, backfilled portions of mine pits and overburden disposal facilities would be concurrently reclaimed.

## **VEGETATION**

The Proposed Action would result in the direct loss of vegetation in areas disturbed by mine-related activities within the South Claims and Dolomite Claims areas, and new haul road disturbances within the proposed mine expansion permit boundary. Vegetation that would be removed during mining includes mountain mahogany, woodlands, sagebrush, and grass species.

Native shrub and tree re-establishment is typically one of the most difficult aspects of reclamation in the arid and semi-arid west, and lengthy time horizons (e.g., more than 20 years) are frequently required before woody plant density and woody plant canopy cover are similar to adjacent or baseline conditions. Additional time is often required in areas with poor soil. Woody plant density on portions of the Indian Creek Mine would not be similar to baseline conditions for many years. The slow establishment of shrubs on reclaimed areas results in potential long-term impacts to growth media stability and related impacts to wildlife through loss of browse species. No indirect impacts to vegetation communities are anticipated.

Overall range condition within the reclaimed areas would initially be diminished as native species become established. Once native perennial grasses have become established on reclaimed areas, range condition would be similar to baseline conditions.

## **Special Status Plant Species**

Up to 19 of 23 sword townsendia plants in the Dolomite Claims Area would be removed by mine activities. Sword townsendia is common within and adjacent to the proposed disturbance in the Dolomite Claims Area. Removal of these individuals would not likely lead to the demise of the species, or extermination of the species from the state. The sword townsendia and lesser rushy milkvetch populations located in the South Claims Area would not be affected by proposed mine disturbances. No indirect impacts to special-status plant species are anticipated.

## **Invasive, Non-native Species (Noxious Weeds)**

Noxious weeds are more common in areas surrounding the Project area, but have invaded portions of the current mine operations and are controlled on an annual basis. Control of noxious weeds in the proposed mine expansion areas would continue in accordance with Graymont's updated and approved Weed Management Plan.

## **Wetlands**

Relatively small, ephemeral non-wetland Waters of the U.S. may be disturbed by the Proposed Action. The current jurisdictional status of these drainages is unknown following the 2006 U.S. Supreme Court decision "*Rapanos v. U.S.*". A Section 404 permit may be required to allow fill of these drainages if they are determined to be jurisdictional by subsequent legal proceedings.

## TERRESTRIAL WILDLIFE

The Proposed Action would result in direct loss of mountain mahogany, woodlands, sagebrush, and grassland habitats. Loss of these habitats would reduce availability of forage, security, and breeding cover for wildlife inhabiting the area. Individuals of some species dependent on these disturbed sites would be killed or displaced.

The capacity of the proposed mine expansion area to support wildlife would be reduced until suitable habitat (including mountain mahogany, sagebrush, other shrubs, and trees) has been re-established. Initially, vegetation on reclaimed areas would likely be dominated by grasses, with low densities of native forbs, shrubs, and trees. Mountain mahogany, sagebrush and other shrubs, typically, are difficult to re-establish on mined land and areas burned by wildfire. Because shrubs are important forage for mule deer, bighorn sheep, and other wildlife species, low rates or delayed re-establishment of these plant species on reclaimed sites would reduce the capacity of the proposed Project to support species with affinities for shrub habitat (e.g., mule deer, Brewer's sparrow, and bighorn sheep).

Removal of 451 acres of mountain mahogany habitat (18 percent of mountain mahogany in the Limestone Hills) as a result of the Proposed Action would have potential to reduce the capacity of the proposed Project area and adjacent Elkhorn Mountains to support mule deer. The extent of reduction would depend on availability of winter forage including mountain mahogany and other browse species favored by mule deer (e.g., sagebrush, juniper, winterfat, rabbitbrush, and skunkbush sumac). Loss of 18 percent of mountain mahogany habitat would likely result in a reduction in the winter range carrying capacity for mule deer in the Limestone Hills until reclaimed sites develop vegetation characteristics comparable to pre-mining conditions.

Approximately 680 acres of habitat would be revegetated with mountain mahogany seedlings at a density of 200 plants per acre, as replacement for mountain mahogany disturbed by mining. In addition to grasses and forbs, other species of tree and shrub seedlings used in revegetation of disturbed areas would include juniper types (100 plants/acre), Douglas-fir (130 plants/acre), yucca (75 plants/acre), and limber pine (25 plants/acre).

Shrub densities, canopy cover values, and biomass production are presently lower for reclaimed sites than for shrub communities on sites not affected by mining. The proposed planting density of 50 to 400 plants per acre is below the woody plant densities in shrub communities on undisturbed sites. Consequently, the capability of reclaimed areas to provide forage for mule deer and bighorn sheep is lower than for undisturbed shrub communities.

Under the Proposed Action, 1,252 acres of bighorn sheep winter range would be disturbed. Bighorn sheep are dependent on shrubs such as mountain mahogany for winter forage. Reductions in the winter forage base could reduce the capacity of the range to support bighorn sheep, if the range is currently at its maximum carrying capacity.

Small mammals, snakes, and insects would be killed by construction activities and vehicle traffic. Small mammals and snakes seek cover underground and removal of soil and rock could result in direct mortality.

Raptors, coyotes, and other predators could experience a reduced prey base due to a reduction in available habitat until reclamation is achieved; however, reclaimed land typically is invaded by small mammals, often within 1 to 2 years following the start of reclamation.

Migratory birds would experience losses of foraging and nesting habitats. If mine construction were to take place in the nesting and brood-rearing period, young birds could be killed and eggs and nests destroyed. Killing or destroying migratory birds would violate the Migratory Bird Treaty Act.

Bats would experience reduced habitat quality through removal of foraging habitat. Highwalls that would result from construction of the open pits would provide fractured rock faces for roosting. Few bats have been recorded in the proposed Project Area, probably because of the limited water sources.

### **Special Status Wildlife Species**

No federally listed or proposed endangered or threatened fish and wildlife species currently exist in the proposed mine expansion area. Implementation of the Proposed Action would not adversely affect threatened and endangered species due to the lack of suitable habitat for most listed species. No fish, amphibians or reptiles listed as sensitive by BLM would be expected to occur in the mine expansion area. Six sensitive bird species (ferruginous hawk, golden eagle, peregrine falcon, burrowing owl, loggerhead shrike, and Brewer's sparrow) could potentially occur in the area, but only the Brewer's sparrow (which is dependent on sagebrush) is believed to currently nest there. Of four sensitive mammal species (Preble's shrew, long-eared myotis, fringed myotis, and Townsend's big-eared bat) that could occur in the area, two (long-eared myotis and Townsend's big-eared bat) have been recorded along Indian Creek, which would not be affected by the Proposed Action.

The Proposed Action would affect habitat for sensitive species, and could affect individuals; however, it would not reduce population viability over the range of occurrence in west central Montana.

### **LAND USE, ACCESS, AND TRANSPORTATION**

Proposed expansion of mine operations into the South Claims and Dolomite Claims areas lies within the MTARNG live fire training Surface Danger Zone in the LHTA. The proposed expansion could have an impact on the "nonexclusive, nonpossessory" military use of the LHTA. The MTARNG is authorized to conduct training exercises in the LHTA during a 140-day period from April through November each year. Implementation of the Proposed Action would affect live-fire training exercises at five weapon system Surface Danger Zones located within the proposed mine expansion area. Military regulations do not allow MTARNG to conduct live-fire operations when personnel are within the bounds of a Surface Danger Zone for a respective weapon system. The level of impact mining operations in the South Claims Area would have on MTARNG training will ultimately be resolved by Congress before Graymont's operations reach the South Claims Area.

### **Grazing**

According to the BLM MRB Survey and Allotment Tabulation Record, mine expansion would result in loss of carrying capacity on 524 acres of the Limestone Hills Grazing Allotment, 775 acres of the Dowdy Ditch Allotment, and about 11 acres in the Indian Creek Allotment. These records are available at the BLM Butte Field Office. Grazing on mine-related disturbance areas would be lost until revegetation and forage production are comparable to pre-mining levels associated with adjacent land.

### **Recreation and Access**

The South Claims and Dolomite Claims areas lie within a portion of the LHTA closed by MTARNG to unescorted public access.

Recreational use and public access in this area are restricted for safety and security reasons. Continued closure of the South Claims and Dolomite Claims areas would have no effect on recreation as the proposed expansion is adjacent to areas with unrestricted access that would remain available for dispersed recreational use.

## **NOISE**

Noise generated from proposed mine expansion activities (e.g., heavy equipment and crusher) would be less than the EPA guideline at 0.25 mile from the Project area. The predicted peak blasting noise level is predicted to be less than the U.S. Army guideline for human annoyance between 0.25 and 0.5 mile from the blast.

## **VISUAL RESOURCES**

The southeastern view of the proposed mine expansion in the Dolomite Claims Area would be viewed by travelers on U.S. Highway 287/12 and by Graymont workers, supply haulers, and recreationists traveling along the Indian Creek Road. Mining operations in the South Claims Area would not be visible from U.S Highway 287/12 or the Indian Creek Road. Partial views of the South Claims Area operations would be visible from the Mud Springs Road along the western boundary. A small portion of the South Claims operations would be visible to residents of Radersburg looking north-northwest.

Results of the Visual Resource Management Inventory and contrast ratings indicate that the proposed mine expansion would not exceed BLM visual management objectives for these areas. The contrast rating for the South Claims and Dolomite Claims areas is moderate, which corresponds to the Visual Resource Class IV.

## **SOCIAL AND ECONOMIC RESOURCES**

Implementation of the Proposed Action would generate a payroll in excess of \$82 million over the life-of-mine in 2007 dollars. Direct employment and income would continue for an additional 35 years beyond the current remaining life-of-mine (15 years) subject to market conditions. Contributions to federal, state, and local tax systems would continue over the projected mine life.

The Proposed Action would maintain the income generated from net proceeds, which could exceed \$9.7 million in property taxes (2003 dollars) and over \$3.8 million in net proceeds tax (2006 dollars). Federal and state income tax revenues would be extended as derived from personal income tax paid by workers at the facility through out the mine life.

## **CULTURAL RESOURCES**

To date, 15 Native American cultural resource properties have been identified and documented within the Project area. These sites are classified as lithic scatter and are largely characterized by pieces of chipped stone. One site is associated with a tipi ring. One historic cultural property has been identified and consists of a historic building foundation and roadbed segment, which may or may not be mining related. Numerous unassociated prospecting pits are also present and appear to be remnants of gold and silver prospecting that occurred during the late 19<sup>th</sup> century and again in the Great Depression era of the 20<sup>th</sup> century.

Analysis of artifacts recovered from site investigations is contained in reports to BLM and the State Historic Preservation Office for inclusion in the Statewide Inventory. Recordation of the 15 Native American sites and one historic cultural property has been completed. The status of these sites for listing on the National Register of Historical Places remains undetermined.

Twelve of the Native American cultural sites (lithic scatter) lie within the proposed disturbance boundary and could be affected by future mine operations. Of these, Graymont has identified four that could be avoided through adjustment to haul routes and/or other mine facilities. Some or all of the remaining eight sites and features could be lost under the Proposed Action. Graymont has indicated that the historic cultural property lying within the proposed disturbance boundary could likely be avoided.

When the eligibility of the affected sites is determined after consultation with the State Historic Preservation Office and tribal governments, BLM and Graymont will mitigate the “adverse effects” as defined by 36 CFR 800.6 of the National Historic Preservation Act (as amended, 1992).

## **PROJECT ALTERNATIVES**

Primary issues identified during public scoping of the proposed Project include: 1) effects of proposed mine expansion on mule deer winter range, and 2) Montana Army National Guard training activities may interfere with proposed mine expansion in the Limestone Hills Training Area.

Issues identified during agency review of the Proposed Action include potential effects of the proposed reclamation plan with respect to steep slope reclamation, habitat diversity, and visual resources. In response to these issues, BLM and DEQ developed Alternative A – Modified Pit Backfill. In addition, the agencies considered the No Action Alternative as a baseline condition on which to base impact analysis for the Proposed Action and Alternative A. These alternatives are summarized below. BLM and DEQ determined that potential interference of National Guard

activities in the Project area with the Proposed Action does not require development of an alternative. See discussion in Chapter I – *Introduction*.

### **ALTERNATIVE A – MODIFIED PIT BACKFILL**

This alternative would implement the same components as the Proposed Action but would require Graymont to place up to 50 percent of run-of-mine overburden and mixed with limestone reject rock and minimal amounts (2 inches or less) of growth media in selected areas of mined-out pits in a configuration that would fill portions of pit highwalls and create steep in-pit slopes. Pit backfill under Alternative A would reduce the visual effect of highwalls and create varied slope angles resulting in areas conducive to establishment of mountain mahogany and other browse species to support wildlife.

### **NO ACTION ALTERNATIVE**

Under the No Action Alternative, the proposed life-of-mine expansion (Proposed Action) would not be approved. Graymont would not develop ore reserves in the South Claims Area or the Dolomite Claims Area. Potential impacts predicted to result from development in these areas would not be realized. Mining operations within the existing permitted area would continue for approximately 15 years at the current production rate.

### **AGENCY PREFERRED ALTERNATIVE**

The agency preferred alternative is Alternative A – Modified Pit Backfill.