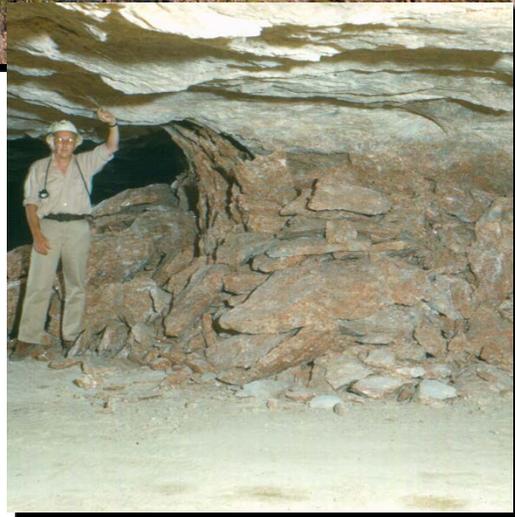


# HB In-Situ Solution Mine Project Record of Decision



**March 2012**

**DOI-BLM-NM-P020-2011-498-EIS**



## ***BLM Mission Statement***

*The Bureau of Land Management is responsible for stewardship of our public lands. The BLM is committed to manage, protect and improve these lands in a manner to serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife habitat, wilderness, air and scenic quality, as well as scientific and cultural values.*

### Cover photo captions:

- Top photo: View from Tower Hill looking north to the location of proposed evaporation ponds.
- Lower left: Harvesting potash precipitated from evaporation ponds. *Courtesy of Intrepid Potash.*
- Lower right: Ore pillar crushing out after second mining completed. Ore in the crushed out pillar is the primary ore target for the solution mine. *Courtesy of Intrepid Potash.*

## Acronyms and Abbreviations

BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act of 1976
Intrepid	Intrepid Potash, Inc.
MLA	Mineral Leasing Act of 1920, as amended
NEPA	National Environmental Policy Act
NMED	New Mexico Environment Department
NOA	Notice of Availability
OHV	off-highway vehicle
RMP	Resource Management Plan
ROW	right-of-way
SPA	Secretary's Potash Area
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

# Contents

- 1.0 Introduction ..... 1**
- 2.0 Decision ..... 1**
  - 2.1 Applicant-committed Environmental Protection Measures ..... 2
  - 2.2 BLM Environmental Protection Measures ..... 4
    - 2.2.1 Construction ..... 5
    - 2.2.2 Caves/Karst ..... 5
    - 2.2.3 Paleontological Resources ..... 5
    - 2.2.4 Water ..... 5
    - 2.2.5 Soils ..... 5
    - 2.2.6 Air Quality ..... 6
    - 2.2.7 Vegetation ..... 6
    - 2.2.8 Wildlife ..... 6
    - 2.2.9 Rangelands and Livestock Grazing ..... 6
    - 2.2.10 Recreation ..... 6
    - 2.2.11 Cultural Resources ..... 7
    - 2.2.12 Health and Safety ..... 7
    - 2.2.13 Other ..... 7
- 3.0 Alternatives to the Selected Alternative ..... 7**
  - 3.1 Alternatives Analyzed in Detail ..... 7
    - 3.1.1 No Action Alternative ..... 7
    - 3.1.2 Alternative A—Proposed Action ..... 7
    - 3.1.3 Alternative B—Supplemental Water Sources ..... 7
    - 3.1.4 Alternative C—Buried Pipelines ..... 8
    - 3.1.5 Environmentally Preferable Alternative ..... 8
  - 3.2 Alternatives Considered but Eliminated from Detailed Analysis ..... 8
- 4.0 Management Considerations ..... 9**
  - 4.1 Compliance with Laws and Regulations ..... 9
  - 4.2 Does the Project Meet the Purpose and Need? ..... 9
    - 4.2.1 Multiple Use ..... 9
    - 4.2.2 Mineral Recovery ..... 9
    - 4.2.3 Technical Viability ..... 10
  - 4.3 Justification for Selecting Alternative D, Preferred Alternative ..... 10
- 5.0 Public Involvement, Consultation, and Coordination ..... 12**
- 6.0 Appeals ..... 13**

## 1.0 Introduction

Intrepid Potash, Inc. (Intrepid) owns potash leases, mines, and processing facilities approximately 20 miles northeast of Carlsbad in Eddy County, New Mexico, within the Secretary's Potash Area (SPA). In 2009, Intrepid submitted a Mine Plan of Operations to the Bureau of Land Management (BLM), Carlsbad Field Office, to propose the in-situ extraction of potash remaining in inactive underground mine workings using solution mining.

The potash mines and most of the land affected by the proposed project are located on land managed by the BLM. In compliance with the requirements of the federal National Environmental Policy Act of 1969 (NEPA), an environmental impact statement (EIS) was prepared to analyze the potential environmental impacts of the proposed project to inform the agency prior to making a decision on whether to allow the proposed project to proceed.

The proposed project involves the injection of saline water into inactive mine workings and the extraction of a mineral-rich solution from which potash can be produced. This mineral-rich solution would be pumped to the surface and transported to evaporation ponds. Once the solution evaporates in the ponds, the potassium-bearing salts would be harvested from the ponds and transported to a newly constructed mill for ore refinement. Once construction is completed, the solution mining is projected to operate for 28 years.

The BLM issued the Draft EIS (DOI-BLM-NM-P020-2011-498-EIS) on April 15, 2011, and the Final EIS (DOI-BLM-NM-P020-2011-498-EIS) on February 3, 2012. The Final EIS is the full analysis document that includes the revisions to the Draft EIS, appendices, and public comments on the Draft EIS with BLM responses.

## 2.0 Decision

Based on the analysis in the HB In-Situ Solution Mine Project EIS, I have decided to approve the Alternative D—Preferred Alternative as it is described in Section 2.4.5 of the Final EIS, to the extent that the proposal involves or affects public land or minerals as provided for by the 43 Code of Federal Regulations (CFR) 3590 regulations. Following is a summary of the Preferred Alternative:

- Modification of 12,867 acres of Intrepid's potash leases (all leases that touch the flood areas) to be classified as solution mining leases instead of conventional mining leases.
- Approving the project, including all components listed below and (1,331 acres of new surface disturbance and 962 acres of long-term disturbance) and granting of rights-of-way (ROWs) and permits to construct the facilities located on BLM land:
  - Four water wells to extract from the Rustler Formation within Sections 1 and 2 of Township 21 South (T21S), Range 29 East (R29E)
  - Six injection wells, five extraction wells, and three monitoring/extraction wells to manage the injectate and brine extraction in or near the flood areas
  - Lined evaporation pond system covering 584 acres
  - Relocation of utilities around the evaporation pond system
  - Pipeline bundles (35 miles), aboveground in designated locations and 68 percent buried in designated locations within the project area boundary; associated maintenance roads, valves, and monitoring equipment
  - Access and haul roads, power lines associated with the new HB mill

- Caprock pipeline with associated access road
- New and upgraded power lines in project area
- Monitoring wells under and near the evaporation ponds and sensitive cave locations
- Pumping and conditioning of groundwater from four Rustler Formation wells to form an injectate solution using a combination of non-potable Rustler water supplemented with potable Caprock water as needed to maintain adequate water supply for the flood areas and processing facilities.
- At the completion of the project, all project surface components and all disturbed areas will be reclaimed and infrastructure would be decommissioned.

## 2.1 Applicant-committed Environmental Protection Measures

Intrepid will adhere to all lease conditions, in addition to all relevant federal and state laws, regulations, and policies under all alternatives. Intrepid has committed to implementing the following measures, as appropriate depending on site-specific conditions, to protect the human environment.

- A subsidence monitoring plan will be prepared and implemented by Intrepid to identify and evaluate any land subsidence in the project area. Monitoring points have already been established with BLM approval, and these locations will be surveyed prior to groundwater extraction and flood pool filling in order to establish baseline values for ground surface elevations.
- A groundwater monitoring plan will be developed by Intrepid and approved by the BLM prior to project implementation. The monitoring plan will describe how the monitoring wells will be operated to evaluate groundwater drawdown and the process for managing water usage as water levels in the wells and groundwater levels vary. Monitoring wells will be used to identify potential depletions of existing springs, wells, caves, and other water bodies that may result from project pumping. The plan will include the use of adaptive management to mitigate adverse impacts from drawdown, including impacts to cave biological resources.
- Siting of facilities will be completed in coordination with BLM resource specialists to ensure that adverse impacts to significant natural and cultural resources are avoided or otherwise mitigated. All facilities will be monitored on a regular basis and controlled through regular field inspection and the use of automated sensing and shutdown equipment at strategic locations to minimize the potential for discharges or leaks. All monitoring, spill response, and remedial actions will comply with the items described in detail in Intrepid's HB In-Situ Solution Mine Operations and Closure Plan approved by the BLM.
- Rustler production wells
  - A 10 foot x 6 foot concrete pad within a 50-foot caliche pad.
  - Well pads will be fenced to exclude access by people or animals.
  - Area surrounding well pads will be bermed to contain any spills and to protect well casing integrity.
  - Backflow preventers will be installed to protect well integrity. An automatic monitoring and shutoff system will be implemented.
- Injection and extraction wells
  - Well management will be subject to the terms and conditions of the New Mexico Environment Department (NMED) Discharge Permit.
  - Well casings will be constructed to exceed Class III well standards. Casing materials will be designed to function in a highly saline environment.

- Well annular space and column pressure-sensing equipment will be installed.
- Well pads will be fenced to exclude access by people or animals.
- A 10 foot x 6 foot concrete pad within a 50-foot caliche pad.
- Automated monitoring system will be installed to support operations and maintain underground workings flood elevations.
- New monitoring/extraction wells
  - A 10 foot x 6 foot concrete pad within a 50-foot caliche pad.
  - Pads will be fenced and bermed.
  - Wells will be sited and designed to detect the presence of underground brine flowing from the flooded mine workings.
  - Each of the three wells will be equipped with automated monitoring systems to detect and report any brines outside the flooded mine workings.
  - Each well will be equipped with the equipment (pumps, power, pipelines, etc.) needed to extract brine that migrates outside the flood pools to prevent a structural or safety problem.
  - In the event that a monitoring well detects brine outside the flooded workings, these wells will act as a safeguard by detecting and extracting “escaped” brine.
- All automated processes will be inspected, calibrated, and verified based on a regular inspection schedule to be established through a field operation and maintenance plan.
- Pipelines
  - Pipelines will be made of ultraviolet resistant high density polyethylene.
  - Pipelines in the project area will be buried at least 2 feet deep. The Caprock pipeline will be buried at least 30 inches deep.
  - Pipelines will avoid steep slopes.
  - Where pipelines are on the surface, they will be buried every quarter mile to allow for range and wildlife movement as well as emergency access.
  - Where pipelines must cross major roadways, the pipe will be installed by boring under the road to minimize traffic disruption.
  - Wherever possible, pipeline ROWs will be located along existing roads or other ROWs to limit surface impacts to already disturbed areas.
  - Automated sensing and shutdown equipment will be installed along the pipelines to minimize the potential for discharges or leaks of the transported brines.
  - The pipelines will be inspected regularly in the field. All monitoring, spill response, and remedial actions will comply with the items described in detail in HB In-Situ Solution Mine Operations and Closure Plan approved by the BLM.
- Lift and booster stations—If these facilities are necessary, all designs will include check valves to account for anti-backflow or siphon conditions and instrumentation to monitor pipeline performance and adjust interdependent flow rates and pressures.
- Power lines—Anti-perch equipment and other raptor protection will be installed on new power lines.
- Roads
  - Vehicle access will utilize existing roads where possible.

- Pipeline inspection roads to be constructed will be limited to a 12-foot width.
- Where needed to maintain stable roads and minimize soil erosion, a base of up to 6 inches of crushed caliche will be placed on the running surface.
- Evaporation ponds
  - Ponds will be lined with 60 mil geosynthetic liners over graded, screened, and compacted subgrade material. The liner will be covered by an 18-inch-thick layer of salt that will harden to provide protection for the liner and minimize the potential for leaks. Salt will come from existing tailings piles.
  - Ponds will be constructed with freeboard to minimize the potential for overtopping and spills.
  - Implement an avian monitoring and mitigation plan designed to anticipate and prevent use of the evaporation ponds by waterfowl.
  - Surface water runoff will be directed away from the ponds by two diversion ditches on the southeast and west sides. Each ditch will be 4,000 feet long and 12 feet wide.
  - A leak detection system will be installed per the State of New Mexico Discharge Permit.
- Soil stockpile
  - The top 6 inches of topsoil from the evaporation ponds will be removed, stockpiled, and stabilized with vegetation.
  - The stockpile will have a flat top and 2:1 side slopes.
  - The stockpile will be bermed to prevent erosion and revegetated until the end of the project life.
- Caliche pits
  - All pits will require BLM permits and site-specific approval.
- Reclamation following project completion
  - All wells will be plugged and abandoned in accordance with applicable rules and regulations.
  - All pond liners will be shredded and either buried onsite or removed to a permitted landfill.
  - The hardened salt layer on top of the pond liners will be excavated and disposed of according to the requirements of the NMED discharge permit.
  - All ancillary equipment will be demolished, razed, and recycled or transported to a permitted landfill for proper disposal.
  - Following the removal of all structures and infrastructure, disturbed areas will be graded and planted with native seed mixtures. Site preparation, planting, and monitoring will be performed in consultation with the BLM, with a goal of returning the property to beneficial post-mining land uses similar to pre-project conditions.

## 2.2 BLM Environmental Protection Measures

Compliance with all applicable agency-wide, statewide BLM policies, regulations, and guidelines is required. In compliance with federal regulations, the BLM will set a reclamation bond for the project sufficient to ensure that reclamation is completed at the end of the project lifespan.

The project will comply with all applicable Carlsbad Field Office measures and guidance designed to minimize adverse impacts to natural and cultural resources from mineral development activities. These mitigation measures are listed below.

### **2.2.1 Construction**

- A qualified person will be onsite at all times to monitor construction activities for compliance with federal and state permits and requirements. This construction monitor would report to the BLM on a regular basis.

### **2.2.2 Caves/Karst**

- Intrepid shall coordinate with the BLM on final layout of all facilities and pipelines within high cave/karst areas. Any facilities that cross major karst features, as defined by BLM staff during field inspection, will be moved or modified before final approval for construction is given.
- Monitoring the stability of facilities (pipelines, wells, roads) in karst terrain shall be performed on a regular basis to identify and minimize the risk of damage to facilities from ongoing karst development and to protect cave resources.
- A BLM-approved groundwater monitoring plan will be developed to check groundwater fluctuations in critical karst areas. Implementation of the plan will include a biological inventory of species in three caves designated by the BLM before groundwater pumping begins, with subsequent monitoring to determine the extent of impacts on cave water from pumping. Adaptive management strategies will be planned and implemented to mitigate groundwater drawdown that would adversely affect the water supply supporting cave species.

### **2.2.3 Paleontological Resources**

- Construction personnel will be instructed about the types of fossils that could be encountered and the steps to be taken if they uncover potentially significant fossils during construction of the project. Instruction will emphasize the non-renewable nature of paleontological resources and that collection or excavation of fossil materials from federal land without benefit of a federal permit is illegal.
- If fossils are found, the BLM is to be contacted immediately to allow qualified BLM staff to determine whether the fossils are scientifically significant and to provide a qualified paleontologist to assess and document the find.
- If fossils are collected, they will be curated at a facility approved by the BLM.

### **2.2.4 Water**

- Where surface pipelines cross existing drainages or intersect points with large contributing drainage areas, the pipelines must be buried below potential scour depth and stabilized with rock to minimize the potential for erosion. (See page 4-44 of Final EIS for locations.)
- A mitigation plan to minimize impacts to groundwater resources will be developed to identify potential measures to reduce groundwater drawdown, such as water conservation improvements.

### **2.2.5 Soils**

- During reclamation, compacted areas will be subsoiled or ripped to the depth of compaction to prepare the seed bed, encourage surface water infiltration, and minimize post-reclamation accelerated runoff and erosion.
- For those soils that are difficult to revegetate, structural erosion control measures will be employed. Regular monitoring of revegetated and reclaimed areas will be implemented, with

regular maintenance or reseeding as needed until the BLM determines that the revegetation is successful.

- Monitor the topsoil stockpiles for erosion quarterly and after large precipitation events.

### **2.2.6 Air Quality**

- Develop a dust control plan prior to the start of construction activities and implement throughout construction or maintenance operations. The dust control plan will identify methods of dust suppression, such as water application to haul roads and other disturbed areas or chemical dust suppressant application where appropriate, according to accepted and reasonable industry practice.
- The BLM encourages the use of equipment that meets United States Environmental Protection Agency's Highway Diesel and Nonroad Diesel Rules for project construction and maintenance operations.

### **2.2.7 Vegetation**

- A noxious weed management plan will be developed that includes pre-construction surveys, education of construction and operation personnel, washing of vehicles and equipment before entering and leaving the project area during construction activities, herbicide spraying, and annual monitoring.
- Pre-construction surveys will be conducted in areas where surface disturbance is planned in or near potential habitat for Scheer's beehive cactus. If the species is identified as occurring in the disturbance footprint, surface-disturbing activities must be moved to be a minimum of 200 feet away from individual plants or populations unless other mitigation measures approved by the BLM are implemented.

### **2.2.8 Wildlife**

- Eight-foot-high fencing will be installed around the evaporation ponds at the base of the earthen berms to minimize access by terrestrial wildlife species.
- If watering locations within the project area dry up due to groundwater drawdown of the aquifer, install new watering facilities or provide supplemental water for use by wildlife species.
- Avoid removing large trees and other woody or succulent vegetation to protect potential nesting habitat or coordinate with the BLM to identify alternative protection measures.
- Follow trenching guidelines developed by New Mexico Game and Fish Department to minimize mortality to reptiles and small mammals during buried pipeline and utility installation.
- Do not revegetate shinnery oak dune habitat if disturbed for installation of the Caprock pipeline.
- At the end of the project, remove all caliche from access roads and revegetate except in shinnery oak dune habitat.

### **2.2.9 Rangelands and Livestock Grazing**

- If the supply to base water and other water wells is sufficiently decreased by groundwater withdrawals so the Section 3 grazing permits are adversely affected, then alternative water sources will be provided or developed by Intrepid.

### **2.2.10 Recreation**

- To minimize conflicts with recreational users, construction shall not occur near off-highway vehicle (OHV) trails within the Hackberry Lake Special Recreation Management Area during the

organized OHV event in September or on weekends during periods of active OHV use (May through September).

### **2.2.11 Cultural Resources**

- One National Register of Historic Places-eligible prehistoric lithic, ceramic, and groundstone scatter was identified near a proposed well location. Although no additional investigation of the site is necessary, an archaeological monitor will be onsite during project construction to protect the site from potential damage. Project construction will not begin prior to arrival of the monitor.
- A BLM-approved archaeological monitor will monitor project construction in areas with the potential for buried cultural remains. The BLM will determine which areas require a monitor. Project construction shall not begin prior to arrival of the monitor.

### **2.2.12 Health and Safety**

- A project-specific emergency response plan will be prepared for the new HB mill and in-situ solution mining operations.

### **2.2.13 Other**

- Intrepid will be responsible for the impacts caused by total subsidence in the project area, including subsidence from the solution mine and from the original mine workings.
- A mitigation plan to minimize adverse impacts to groundwater resources will be developed to identify potential measures to reduce groundwater drawdown, such as water conservation improvements. The BLM encourages Intrepid to develop additional water conservation and reuse opportunities.

## **3.0 Alternatives to the Selected Alternative**

### **3.1 Alternatives Analyzed in Detail**

#### **3.1.1 No Action Alternative**

The No Action Alternative would deny the approval of the proposed project and would not modify the existing potash leases. Current land and resource uses would continue under current conditions in the project area.

#### **3.1.2 Alternative A—Proposed Action**

The Proposed Action would include approval of Intrepid's HB In-Situ Solution Mine Operation and Closure Plan, granting new ROWs, approval of permits to drill seven Rustler new water supply wells, and the same number of injection, extraction, and monitoring wells as described for the Preferred Alternative. All pipeline bundles in the project area would be located on the ground surface. The evaporation pond system would be smaller than under the Preferred Alternative. All water for the flood pools would be supplied from the Rustler wells in the project area.

#### **3.1.3 Alternative B—Supplemental Water Sources**

This alternative would include approval of Intrepid's mine operation and closure plan, granting new ROWs, approval of required lease modifications, and approval of permits to drill new water supply, injection, extraction, and monitoring wells. Additional water sources from Intrepid's Caprock wells east of the project area would be used to supplement the saline water whenever the Rustler water supply is inadequate to meet the optimum filling rate of the flood pools. Intrepid's existing pipelines from the

Caprock wells would be improved. Fewer Rustler wells and pipelines would be developed, but all of the other facilities and process plans would be the same as the Proposed Action.

### **3.1.4 Alternative C—Buried Pipelines**

This alternative would approve Intrepid's HB In-Situ Solution Mine Operation and Closure Plan, grant ROWs with modifications designed to limit surface facilities, approve permits for new water supply, injection, extraction, and monitoring wells, and approve lease modifications. Intrepid's proposal would be modified to bury all pipelines. The layout of the pipeline system would be the same as that described for Alternative A, Proposed Action.

### **3.1.5 Environmentally Preferable Alternative**

The environmentally preferable alternative is the No Action Alternative because it would create the least impact to water resources and wildlife. However, the BLM believes that the Preferred Alternative should be selected because it complies with the 1986 Order, the BLM's principles of multiple use, and provides benefits to the local economy. The management considerations described below outweigh the limited impact to wildlife and water resources, particularly considering mitigation and monitoring measures that will be implemented.

## **3.2 Alternatives Considered but Eliminated from Detailed Analysis**

The BLM considered six other alternatives but eliminated them from detailed analysis as discussed in Section 2.3 of the Final EIS. The alternatives and the primary reasons for elimination are summarized below.

- Conventional Underground Mining of Remaining Reserves—does not meet the purpose and need of allowing technically viable development that would comply with existing mine and safety regulations. It would not be safe to extract the potash from the inactive workings (HB Crescent, HB North, HB South, and HB Eddy) through conventional mining methods.
- Solution Mining of Additional Potash-bearing Formations within the SPA—does not meet the purpose and need of allowing technically viable potash development. Current information shows that most of the SPA does not contain the contiguous, high quality potash ore in sufficient quantity needed for viable solution mining. Solution mining of all potash-bearing formations within the SPA would not comply with the 1986 Order because it would give priority to potash mining over fluid minerals. Also, there are many areas within the SPA that cannot be flooded due to safety concerns.
- Smaller Flood Area—does not meet the purpose and need for the project because it would not comply with the BLM's responsibility to support the orderly and efficient development of leasable minerals in accordance with applicable federal law, including Title 30, Chapter 2, Section 21a, which requires wise and efficient use of mineral resources. In addition, this alternative would not meet the requirement for ultimate maximum recovery of mineral resources under 43 CFR 3594.1, resulting in a waste of the resource, while the same amount of surface disturbance for infrastructure would be needed. Undue waste of mineral resources also is prohibited by the Federal Land Policy and Management Act of 1976 (FLPMA) and the Mineral Leasing Act of 1920, as amended (MLA).
- Larger Flood Area—does not meet the purpose and need of complying with existing mine and safety regulations and it would violate the 1986 Order. A larger flood zone in the four targeted mine workings would threaten the safety of workers in Intrepid's West Mine. It also might adversely affect operating oil wells in the Barber Field, constituting a hazard to oil or gas production in violation of the 1986 Order.
- Allow Expansion of Oil and Gas Development in the Project Area—does not meet the purpose and need of complying with the 1986 Order. Giving priority to fluid minerals over potash mining

in the project area would not be in compliance with the 1986 Order or BLM policy, which requires concurrent development. In addition, drilling through open mine workings would be in violation of the part of the 1986 Order specifying that oil and gas cannot be drilled in a location that would pose a safety hazard to potash mining.

- Use Capitan Aquifer as Water Source—existing data suggest it is unlikely that the Capitan Aquifer in the project area would provide an adequate supply of water to the HB In-Situ Solution Mine Project. Wells attempting to use the Capitan Aquifer water in the project area likely would be very deep with low yields. In addition, there are uncertainties regarding water quality due to the possible introduction of contaminants from the salt water injection wells. Intrepid does not have water rights in the Capitan and did not propose using this aquifer to supply project water. For these reasons, this alternative water source is unlikely to be suitable and was eliminated from detailed analysis.

## 4.0 Management Considerations

In making my decision to approve the Proposed Action, I have carefully considered the following factors.

### 4.1 Compliance with Laws and Regulations

The project is in compliance with all federal laws, regulations, and plans for which the BLM has jurisdiction, including but not limited to the MLA, FLPMA, the 1986 Secretary's Potash Order, the 1988 Resource Management Plan (RMP), and the 1997 and 2008 RMP revisions. It is a condition of approval that the proponent is in compliance with all federal, state, and local laws, and has received all applicable permits and permissions.

### 4.2 Does the Project Meet the Purpose and Need?

The BLM has carefully reviewed the proposed project to ensure that it meets the purpose and need statement described in Chapter 1, Section 1.2, of the EIS.

#### 4.2.1 Multiple Use

*The BLM is responsible for the balanced management of the public lands and resources and its various values in a fashion that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; combinations of uses that take into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific, and cultural values (BLM 1997). (Final EIS, Section 1.2, page 1-3)*

The project meets the BLM's requirement for balanced management of public lands, resources, and values. The project allows for the development of minerals while protecting other resource values including air quality, water quality, wildlife, cave resources, and cultural resources. The project will not unduly interfere with other uses of the land including oil and gas development, ranching, and recreation. At the end of the project lifespan, the entire footprint and all project infrastructures will be reclaimed and returned to a natural state. A bond is in place to ensure that the reclamation occurs when required.

#### 4.2.2 Mineral Recovery

*The BLM has the responsibility to promote the orderly and efficient development and maximum recovery of leasable minerals, including potash, as specified under 30 United States Code (USC) Chapter 2 §21a, the Mineral Leasing Act of 1920 as*

*amended, the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1761), and the Secretary of the Interior's 1986 Potash Order (51 Federal Register 39425, October 28, 1986). The BLM has the duty to allow and encourage leaseholders to develop their leases subject to reasonable restrictions. (Final EIS, Section 1.2, page 1-3)*

Alternative D, the preferred alternative, allows for the recovery of leasable potash that would otherwise not be recovered. These minerals are not accessible by conventional mining. The mine plan of operation allows for the maximum use of the potash resource in an orderly and efficient manner. Alternative D allows the leaseholder to develop its lease to the maximum extent while requiring mitigation measures and conditions of approval sufficient to protect the environment.

#### **4.2.3 Technical Viability**

*The purpose of this project is to provide for technically viable development of the potash resources, as required by federal law and the federal leases and to allow the lessee to exercise its right to develop its leases subject to applicable mine and safety laws and the 1986 Order. (Final EIS, Section 1.2, page 1-3)*

After careful review of the project, I have determined that the Preferred Alternative is technically viable. Solution mining of potash ore has been successful at Intrepid's mine in Moab, Utah, and the technology is used by other companies in many locations around the world. No fundamentally new technology will be used in the project.

### **4.3 Justification for Selecting Alternative D, Preferred Alternative**

The Preferred Alternative, Alternative D, was developed after comments were received on the Draft EIS. The alternative is a combination of the original three action alternatives evaluated. The following project-related actions under Alternative D will contribute to resource protection on public lands.

- Water use
  - Alternative D allows for the greatest flexibility of water use. Water can be extracted from either the Rustler Formation or the Caprock Aquifer. This allows for adaptive management if the non-potable Rustler water yield is not adequate to meet project requirements or if monitoring demonstrates that the groundwater drawdown adversely affects cave resources.
  - Alternative D eliminates the issue of lead contamination in the northern Rustler wells.
  - Alternative D, by allowing for the use of Caprock water, minimizes the adverse impacts to springs, seeps, the Pecos River, and surface vegetation from the sole use of Rustler water.
  - Alternative D requires that the new Caprock pipeline be located and constructed in such a way as to minimize adverse impacts to the sand dune lizard and its habitat.
- Buried pipelines
  - Burying the pipelines in the Hackberry OHV area mitigates safety concerns associated with OHV use and allows for unimpeded future trail development.
  - Burying 68 percent of the pipelines will improve livestock and wildlife access, reduce habitat fragmentation, and minimize the visual impact of the project.
- Mineral extraction
  - Alternative D allows for the maximum use of the potash mineral resources compared to the No Action Alternative.

- Alternative D will have a positive impact on local and state revenue, as well as on local employment compared to the No Action Alternative.
- Pipeline and pond modifications
  - Alternative D includes minor modifications to the pipeline routes to improve efficiency, minimize surface disturbance, and avoid sensitive karst features.
- Lease modifications
  - Alternative D removes 12,867 acres from the 96,000-acre conventional mining lease limit per state. This is the acreage of all HB Potash leases that the flood pool touches. It is the acreage that would be unusable for future exploration and from which the maximum possible potash will be extracted.
  - The alternative to remove just the acreage of the flood pools themselves (3,644 acres) was not selected because the entire lease would be unusable for future exploration once it is flooded.
  - The alternative to remove the acreage of all HB Potash leases in the project area (22,189 acres) was not selected because some of the leases will not be affected by the flood pools, leaving the leases available for future extraction.

The BLM has determined that the environmental impacts of this project are acceptable for the following reasons:

- A subsidence monitoring plan and a groundwater monitoring plan are in place and are sufficient to mitigate the adverse impacts from subsidence and drawdown to surface resources and caves and karst features.
- The avian mitigation plan for the evaporation ponds will minimize adverse impacts to migratory birds.
- The new Caprock pipeline route will minimize adverse impacts to the sand dune lizard by avoiding its habitat.
- Burying most of the pipelines and requiring a buried pipeline section every quarter mile will minimize habitat fragmentation and allow for unrestricted wildlife and livestock access and movement.
- Adverse impacts to oil and gas development would be minimal. Current access to oil and gas resources will not change and the project is consistent with the concurrent development requirements for the SPA.
- The project is occurring in a region that has experienced a high degree of mining and oil and gas development. There is already substantial surface disturbance and existing structures. The additional disturbance will not change the overall character of the landscape in the area.
- The BLM has determined that the social and economic benefits outweigh the negative environmental impacts of the project. The project will have substantial social and economic benefits including:
  - Federal mineral royalties: \$2.3 to \$4.7 million
  - Local property taxes: \$0.5 to \$1 million
  - Gross receipts personal and corporate taxes: \$9.8 million
  - Employment: 272 short-term and 36 long-term employees
  - No disproportional adverse impacts on minority or low income populations

In making my decision to approve the Proposed Action, I have carefully considered the following factors.

- The Preferred Alternative is the alternative that best fulfills the agency's statutory mission and responsibilities, considering economic, environmental, technical, and other factors.
- The Decision conforms to the Carlsbad RMP's objective for minerals, as well as the 1986 Order, FLPMA, and the MLA.
- Implementation of this Decision will not cause unnecessary or undue degradation of the public lands and is consistent with other legal requirements.
- The Decision will help maintain revenue for local and state government and will provide additional employment for the local economy.

## 5.0 Public Involvement, Consultation, and Coordination

The Notice of Intent to prepare an EIS for the HB In-Situ Solution Mine Project was published in the *Federal Register* on January 12, 2010. Consultation and coordination with various federal, state, and local agencies, organizations, and individuals has been accomplished through formal and informal means of communication, including meetings, interviews, e-mail exchanges, telephone calls, and other verbal exchanges.

A newsletter bulletin was mailed to 146 interested parties including federal, state, and local agencies and governments to explain the proposed project and announce the start of public scoping. The public scoping period also was advertised in local newspapers and through public service announcements on local and regional television and radio stations.

Two public scoping meetings were conducted, beginning with a formal presentation to the public to ensure that meeting attendees were informed about the project. The presentation was followed by an informal open house to allow meeting attendees to ask questions. BLM representatives staffed information stations on relevant resources and programs (e.g., biology, oil and gas, mining, realty, cultural) to receive public input and answer questions. Display boards showing the NEPA process and maps of the proposed project were provided to facilitate conversation. The BLM's bulletin, which provided information about the project, the schedule, and the scoping process, was available as a handout to meeting attendees. A total of 35 members of the public attended the scoping meetings.

BLM received a total of 17 comment submittals (e.g., letter, comment form, verbal comments) containing 133 individual comments during the 30-day public scoping period. In addition to the two public scoping meetings held on January 26, 2010, in Carlsbad, New Mexico, some interviews of selected state and local government representatives were conducted to collect information particular to issues related to socioeconomics.

The Notice of Availability (NOA) for the Draft EIS was published in the *Federal Register* on April 15, 2011. This began the 60-day period for public review and comment of the Draft EIS. Prior to publication of the NOA, the BLM mailed the second project bulletin to 111 people who indicated that they wanted to be on the mailing list. The BLM mailed hard copies of the Draft EIS to nine people or agencies and 62 electronic copies on CD, based on requests and agency policy. E-mail notification of the NOA and the availability of the Draft EIS for downloading from the project website were sent to 55 people who provided addresses.

Two public meetings to receive public comments on the Draft EIS were held. The meetings were publicized through the project website, public service announcements to local radio and television stations, and through display advertisements in Artesia Daily Press, Hobbs News-Sun, and Carlsbad Current-Argus. The meetings began with a formal presentation to the public to ensure that meeting

attendees were informed about the project and the findings in the Draft EIS. The presentation was followed by an informal open house to allow meeting attendees to ask questions and submit comments. BLM representatives staffed information stations with display boards showing the alternatives analyzed in detail, some of the key findings from the impact analysis, and information on the NEPA process. Sixty members of the public attended the Carlsbad meeting and 18 people attended the Hobbs meeting.

During the public comment period, the BLM met with representatives from local governments and state and federal agencies to answer questions and explain the findings of the Draft EIS. In response to a request from one agency, the BLM extended the public comment period by 2 weeks, closing on June 23, 2011 instead of June 13 as originally scheduled. The BLM received 27 distinct comment letters and 139 form letters from which 217 unique comments were categorized.

On December 21, 2010, the BLM mailed letters of invitation for cooperating agency status to 42 federal, state, and local government agencies, and interested tribes and pueblos. Formal cooperating agency agreements have been signed by eight organizations: the cities of Carlsbad, Eunice, and Hobbs; Chaves and Lea counties; the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department; the NMED; and the U.S. Department of Energy. The Hopi Tribe and three federal agencies declined the invitation to become cooperating agencies.

Consultation with the United States Fish and Wildlife Service (USFWS) initially was conducted informally. Numerous conversations and e-mail exchanges with a variety of USFWS biologists have been completed in pursuit of guidance and recommendations regarding anticipated impacts from the proposed project and recommendations for potential mitigation measures that would be appropriate. A biological assessment evaluating the effect of the Preferred Alternative on the sand dune lizard and its habitat was submitted to the USFWS by the BLM on October 24, 2011.

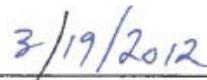
On February 1, 2010, the BLM sent letters to the Mescalero Apache Tribe, Apache Tribe of Oklahoma, Comanche Indian Tribe, Pueblo of Isleta, Kiowa Tribe of Oklahoma, Ysleta del Sur Pueblo, and Hopi Tribal Council as part of the consultation efforts for the proposed project. To date, only the Hopi Tribe, Pueblo of Isleta, and Ysleta del Sur Pueblo have responded. The Hopi Tribe, Pueblo of Isleta, and Ysleta del Sur Pueblo have no concerns with the proposed project but requested to be notified in the event unanticipated discoveries, including human remains, are unearthed during project construction. No traditional cultural properties or places of cultural and religious importance have been identified in the project area by the tribal groups.

## 6.0 Appeals

A party that is adversely affected may file such an appeal in accordance with the procedures in 43 CFR Part 4.1.10. An appeal shall be filed not later than 30 days after the date the Record of Decision is issued.



Jim Stovall, Carlsbad Field Manager



Date