

Executive Summary

This Executive Summary is intended to provide a brief overview of the proposed project, alternatives, and conclusions from the impact analyses. For the supporting documentation and detailed analyses, please see the full environmental impact statement (EIS).

Project Overview

Intrepid Potash, Inc. (Intrepid) is proposing to extract the potash, a potassium compound commonly used for fertilizer, remaining in inactive underground mine workings. Intrepid proposes to construct and operate a solution mine project in an existing deep mine, located approximately 20 miles northeast of Carlsbad in Eddy County, New Mexico (see **Figure ES-1**).

Instead of excavating the remaining potash left in the remaining underground pillars and walls of the inactive workings, the process would inject saline water into the mine workings and extract a mineral-rich solution. 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.

The project area, which encompasses the proposed facilities and inactive workings under consideration, includes a total of 38,453 acres, of which 31,439 acres (82 percent) is on public lands managed by the U.S. Department of the Interior, Bureau of Land Management (BLM), 4,954 acres (13 percent) is managed by the State of New Mexico, and 2,060 acres (5 percent) are privately owned. The project area is located within the Secretary's Potash Area (SPA), designated to provide guidance for the management of federal oil, gas, and potash leasing and development.

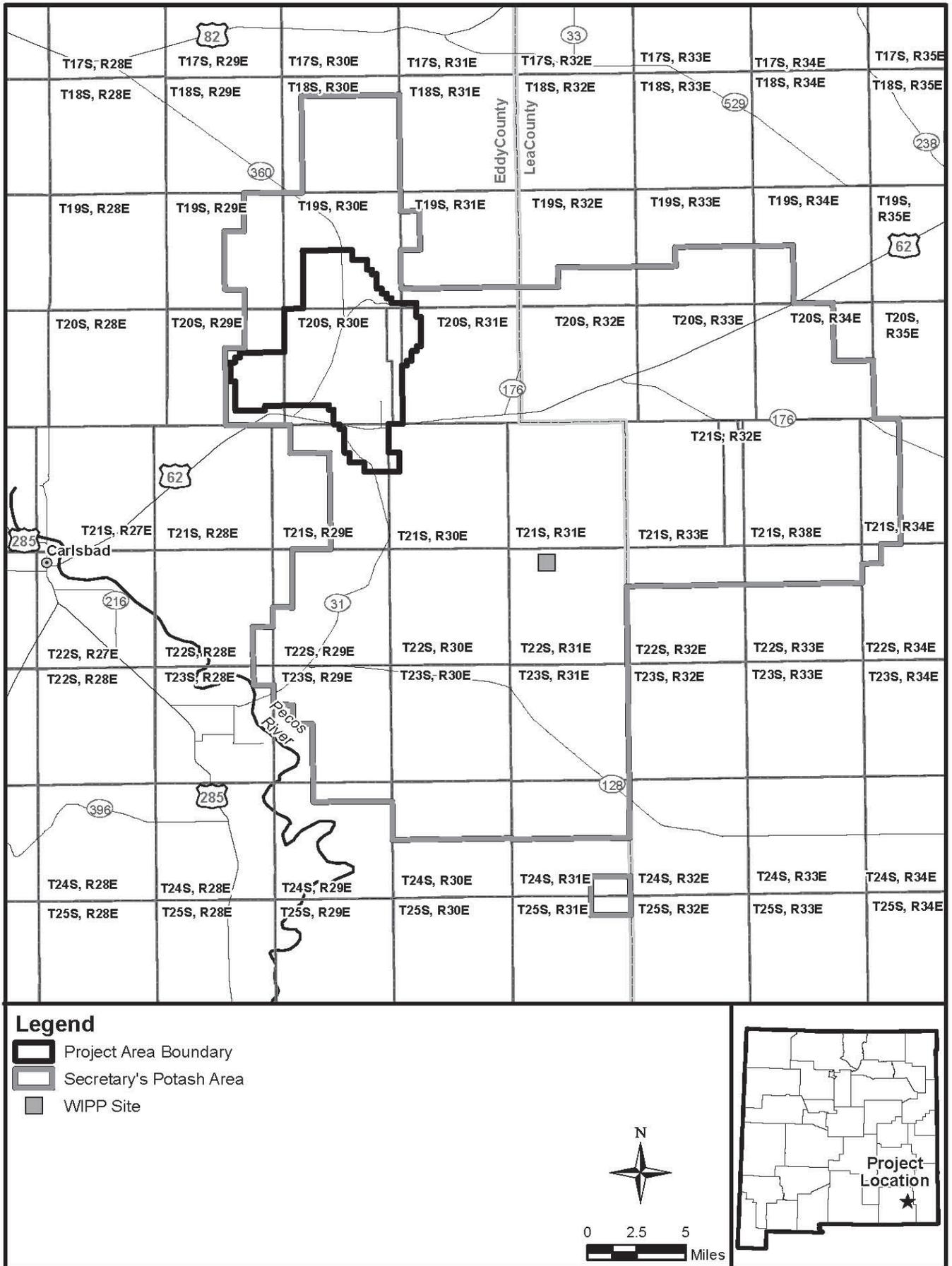
Purpose and Need for Project

Under the National Environmental Policy Act (NEPA) of 1969, there is a requirement to present the purpose and need for a proposed project. The "Regulations for Implementing NEPA" from the Council on Environmental Quality, 40 Code of Federal Regulations (CFR) §1502.13, state the following about the description of the purpose and need in an EIS.

"The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."

The purpose and need statement is intended to explain the reason that the proposed project is needed by the lead agency (BLM in this case) and serves as the basis for developing a reasonable range of alternatives.

The BLM is responsible for the balanced management of the public lands and resources and their 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).



Potash is an important industrial mineral in wide demand in the U.S. The BLM has the responsibility to promote the orderly and efficient development and the 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.

The BLM will evaluate and respond to Intrepid's proposal (Proposed Action) to construct, operate, maintain, and decommission an in-situ solution mining operation, including approval of the mine operation plan, rights-of-way (ROWs), and lease modifications.

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.

The proposed project would:

1. Further develop a potash mining operation by utilizing an in-situ solution mining technique that allows for the recovery of additional ore.
2. Extract the maximum technically feasible quantity of potash from inactive workings (HB Eddy, HB South, HB North, and HB Crescent) in accordance with mining and safety regulations.

Decisions to be Made

This EIS provides the analysis upon which the BLM can base its decisions. The decisions to be made by the BLM are:

1. Whether to approve Intrepid's HB In-Situ Solution Mine Operation and Closure Plan, requested ROWs, and lease modifications, and if so, under what terms and conditions.
2. If in-situ solution mining is approved by the BLM, a further decision is how to modify Intrepid's potash leases to be in compliance with the allowable acreage stated in 43 CFR §3503.37, as amended. Intrepid's leases that cover the proposed solution mining will be changed from conventional to solution mining leases and that acreage will not be counted against the 96,000-acre cap. Acreage changes would be calculated based on one of the following scenarios.
 - Add the acreage of all leases underlain by the flood pool for in-situ solution mining (3,644 acres under the Proposed Action).
 - Add the acreage of all HB Potash leases in the project area (22,189 acres).
 - Add the acreage of all leases, in their entirety, which touch the flood area (12,867 acres).

Public Participation

Scoping

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. Two public scoping meetings were held on January 26, 2010, to collect comments on the proposed project.

By the end of the 30-day public scoping period, BLM received a total of 17 comment submittals (e.g., letter, comment form, verbal comments) containing 133 individual comments. The comments were compiled and analyzed to identify issues and concerns.

A majority of the comments received during the scoping period were related to the potential impacts associated with solution mining processes, potential impacts to groundwater, the potential for subsidence, and potential impacts to oil and gas exploration and operations. The number of comments by category is provided in **Table ES-1**.

A cooperating agency is typically invited to participate in NEPA projects because it has “special expertise,” as defined in CEQ’s NEPA regulations at 40 CFR 1508.26. On December 21, 2010, the BLM mailed letters of invitation for cooperating agency status to 42 tribes, pueblos, and federal, state, and local government agencies. Five local governments, two state agencies, and one federal agency have requested cooperating agency status, all of which have signed agreements.

Table ES-1 Comments Received by Category

Category Name	# of Comments
Alternatives	5
Biological Resources	12
Cumulative Impacts	2
Geology	6
Health/Safety	3
Land Ownership/Adjustment	1
Leasing	3
Livestock Grazing/Range Management	3
Mining	26
Mitigation Measures	5
Monitoring	3
NEPA Process	8
Noise	1
Oil and Gas	28
Out of Scope	2
Project Description	21
Public Involvement	2
Reclamation	2
Requests for Information	1
RMP Consistency	1
Socioeconomics	2
Subsidence	19
Surface Disturbance	2
Threatened and Endangered Species	1
Vegetation/Botany	1
Water Resources	40
Wildlife	5
Total	205

Draft EIS

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, BLM mailed the second project Bulletin to 111 people who indicated that they wanted to be on the mailing list. 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 were held from 3:00 p.m. to 7:00 p.m., one each in Carlsbad (May 10, 2011) and Hobbs (May 11, 2011), New Mexico. 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.

In response to a request from one agency, BLM extended the public comment period by two weeks, closing on June 23, 2011 instead of June 13 as originally scheduled. BLM received 27 distinct comment letters and 139 form letters from which there were 217 unique comments that were categorized.

Tribal Consultation

On February 1, 2010, the BLM-Carlsbad Field Office sent letters to the following pueblos and tribes notifying them of the proposed HB In-Situ Solution Mine project:

- Apache Tribe of Oklahoma
- Comanche Indian Tribe
- Hopi Tribe
- Kiowa Tribe of Oklahoma
- Mescalero Apache Tribe
- Pueblo of Isleta
- Ysleta del Sur Pueblo

The BLM received responses from the Pueblo of Isleta and the Ysleta del Sur Pueblo. Both Pueblos stated that the project will not impact either Pueblos' religious or cultural sites; however, should discoveries be found during project construction, notification of findings would be appreciated. The BLM intends to continue consultation throughout the environmental review and construction phase of the Preferred Alternative, if approved. Renewed contacts with some or all of the tribes may result if there are unanticipated discoveries.

Proposed Action and Alternatives

No Action

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.

Alternative A—Proposed Action

The Proposed Action would include approval of Intrepid's mine operation and closure plan, granting new ROWs, approval of permits to drill new water supply, injection, extraction, and monitoring wells, and approval of required lease modifications. Following is a brief summary of Intrepid's proposed operations, projected to function for 28 years.

- Pumping and conditioning of groundwater from seven Rustler Formation wells to form an injectate solution.
- Transport of the injectate through a surface piping system and injection of the solution through six wells into the lower portions of four separate former underground mine workings.
- Extraction of the resulting pregnant brine from the underground mine workings through five extraction wells.
- Pumping the brine through above-ground pipelines to evaporation ponds where the potassium and sodium salts (KCl and NaCl, respectively) would be precipitated.
- Harvest of precipitated potash and salt from the evaporation ponds and transport to a new flotation mill (HB Mill).
- Refinement of ore to marketable potash product at the new HB Mill and the existing Intrepid North Plant. Recycling of NaCl tailings to condition the injection source groundwater to be used for injectate.
- At the completion of the project, all project components and all disturbed areas would be reclaimed and infrastructure would be decommissioned.

Alternative B—Supplemental Water Sources

This alternative would include approval of Intrepid's HB In-Situ Solution 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.

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 required 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.

Preferred Alternative

According to CEQ's NEPA regulations at 40 CFR Section 1502.14(e), the agency's preferred alternative should be identified in the Final EIS. This alternative must fulfill the BLM's mission and responsibilities, while giving consideration to economic, environmental, technical, and other factors. The BLM, as the decision-maker, selected aspects of Alternatives A, B, and C to develop the Preferred Alternative. This alternative includes approval of Intrepid's revised HB In-Situ Solution Mine Operation and Closure Plan, granting new ROWs, approval of lease modifications to remove 12,867 acres from the 96,000-acre conventional mining lease limit per state, and approval of permits to drill new water supply, injection, extraction, and monitoring wells. The overall footprint of the evaporation ponds would increase by 62 acres. There would be minor changes to the layout of the pipelines in the project area to avoid karst

features and improve the efficiency of layouts for a variety of reasons. Approximately 68 percent of the pipeline bundles would be buried. Within the project area, four Rustler wells would be developed and additional water sources from Intrepid's Caprock wells east of the project area would be used to supplement the required water quantity whenever the Rustler water supply is inadequate to meet the optimum filling rate of the flood pools. A new pipeline from the Caprock wells would be installed along an alignment designed to avoid sand dune lizard habitat. All of the process plans would be the same as the Proposed Action.

Environmental Consequences

The resource-specific effects of the alternatives analyzed in detail (No Action, Proposed Action, Alternative B, and Alternative C) were evaluated quantitatively and qualitatively, as appropriate based on available data and the nature of the resource analyzed. Detailed descriptions of impacts are presented for each alternative in Chapter 4.0. A summary of the key points of the conclusions from the impact analyses is provided in **Table ES-2**. Detailed descriptions of impacts are presented for each alternative in Chapter 4.0. The summarized impacts assume the implementation of applicant-committed environmental protection measures and the BLM required environmental protection measures. However, it is not assumed that the recommended mitigation measures would be implemented. Implementation of the recommended mitigation measures identified in Chapter 4.0 potentially would further reduce impacts.

Cumulative Impacts

Cumulative impacts are the combination of the individual effects of multiple actions over time in the context of other development in the project area or the region. The individual effects may be minor when considered separately, but may be major or significant when considered in combination with all others in the region. Cumulative impacts from past, present, and reasonably foreseeable development are presented in Chapter 5.0. For each resource, the Cumulative Effects Study Area (CESA) was developed appropriate to the geographical extent of anticipated impacts.

The cumulative impact analysis focused primarily on reasonably foreseeable future actions that were known by the BLM at the time the analysis was performed. The list, provided in **Table ES-3**, includes actions that are likely to affect the same resources that were analyzed in Chapter 4.0. Their impacts on the region were considered in combination with the proposed HB In-Situ Solution Mine Project to predict the potential cumulative effects of all actions combined on each of the resources analyzed in the EIS.

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Geology and Minerals					
Subsidence Hazards	Natural and historical mine-related subsidence likely to continue.	Increased potential for mining-related subsidence as more potash is removed. Maximum subsidence is 0.6 foot.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed.
Caves	No impact other than from ongoing natural and historical mine-related subsidence that may affect caves.	New access roads may increase public access of caves. Small chance that drilling into unrecorded cave/karst features may allow fresh water to enter the groundwater system or dissolve evaporite strata. 42 to 43 known caves in the project area may be affected by drawdown.	New access roads may increase public access of caves. Small chance that drilling into unrecorded cave/karst features may allow fresh water to enter the groundwater system or dissolve evaporite strata. 18 to 38 known caves in the project area may be affected by drawdown.	Same as Proposed Action.	Same as Alternative B.
Minerals	No additional potash would be recovered from inactive workings and maximum recovery of the mineral resource would not be achieved. Intrepid's conventionally mined potash leases would not exceed 96,000 acres in New Mexico.	Additional potash reserves would be recovered and the maximum recovery of the mineral resource would be achieved. The total acreage of Intrepid's potash leases may increase.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Oil and Gas	There would be no change to oil and gas's existing access to fluid minerals in the project area.	Oil and gas access to fluid minerals in the project area would not be affected.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Paleontological Resources	Potential impacts are small.	Potential impacts are small, but may increase as public access to the area increases due to new roads.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Water					
Subwatersheds most affected by surface disturbance	None.	Clayton Basin and Maroon Cliffs.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Number of locations where surface pipelines block drainages, increasing potential erosion	None.	9	Same as Proposed Action.	0	6
Maximum Rustler area drawdown depth and acreage	No impact.	200 feet; 1,850 to 6,500 acres, depending on Rustler model used.	0 to 200 feet, depending on water source used. 200-foot drawdown contour encompasses between 1,450 and 4,750 acres, depending on Rustler model used.	Same as Proposed Action.	Same as Alternative B.
Maximum seep/spring reduction	No impact.	64%	31%	Same as Proposed Action.	Same as Alternative B.
Maximum Nash Draw flux reduction	No impact.	35%	25%	Same as Proposed Action.	Same as Alternative B.
Maximum Caprock area drawdown	No impact.	8 feet	52 feet	Same as Proposed Action.	Same as Alternative B.

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Maximum Caprock area drawdown over life of project	No impact.	8 feet	34 feet	Same as Proposed Action.	Same as Alternative B.
Soils					
Low revegetation potential soils disturbed	None.	792 acres	Max. 1,145 acres (existing Caprock pipeline option)	Same as Proposed Action.	862 acres
High wind erosion soils disturbed	None.	216 acres	Max. 357 acres (existing Caprock pipeline option)	Same as Proposed Action.	284 acres
Air Quality					
New HB mill emissions	None.	No exceedance of ambient air quality standards or PSD increment. PM ₁₀ =11.8 tpy; NO _x =12 tpy; SO ₂ =0.07; VOC=0.7	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
State and federal ambient air quality standards	No impacts.	Not exceeded by fugitive or stationary sources. Total project NO _x emissions <0.001% of current Eddy County emissions.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Sensitive areas	No impacts.	Not affected by emissions from project.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Climate Change					
Greenhouse gas CO ₂ equivalent emissions	None.	Negligible impacts to global climate change from construction and project operations.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Vegetation					
Vegetation types disturbed (acres)	None.	Mesquite Upland Scrub: 597 acres; Desert Scrub: 346 acres; Grassland: 44 acres.	Existing Caprock pipeline replacement: Mesquite Upland Scrub: 803 acres; Desert Scrub: 387 acres; Grassland: 154 acres. New Caprock Pipeline: Mesquite Upland Scrub: 736 acres; Desert Scrub: 377 acres; Grassland: 142 acres.	Same as Proposed Action.	New Caprock pipeline replacement: Mesquite Upland Scrub: 723 acres; Desert Scrub: 404 acres; Grassland: 142 acres.
Vegetation types most affected by groundwater drawdown (acres)	None.	Mesquite Upland Scrub: 5,932 – 6,044 acres; Desert Scrub: 2,561 – 2,622 acres; Grassland: 836 – 840 acres; Woody Riparian: 639 – 655 acres.	Mesquite Upland Scrub: 1,332 – 3,282 acres; Desert Scrub: 483 – 1,579 acres; Grassland: 738 – 425 acres; Woody Riparian: 6 – 56 acres.	Same as Proposed Action.	Same as Alternative B.
Sensitive plant species habitat potentially affected	None.	Scheer's beehive cactus: 377 acres; gypsum wild buckwheat: 128 acres.	Existing Caprock pipeline: Scheer's beehive cactus: 420 acres; gypsum wild buckwheat: 138 acres New Caprock pipeline: Scheer's beehive cactus: 420 acres; gypsum wild buckwheat: 138 acres	Same as Proposed Action.	New Caprock pipeline Scheer's beehive cactus: 443 acres; gypsum wild buckwheat: 135 acres

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Wildlife and Fish					
Terrestrial wildlife habitat	None.	Impacts from surface disturbance, habitat disruption, and fragmentation would be relatively minor. Less mobile small game and nongame species likely to be the most affected by surface disturbance and blockage of movements due to surface pipelines. Significant potential adverse impacts to migratory birds from exposure to evaporation pond water unless mitigation measures are implemented.	Same as Proposed Action.	Same as Proposed action with no wildlife movement blockages due since pipelines will be buried.	Same as Proposed Action with less wildlife movement blockages due to fewer and more strategically placed surface pipelines.
Sensitive Species	None.	The seven bat species, burrowing owl, loggerhead shrike, and sand dune lizard may be affected by changes to the scrub, grass, and woody riparian vegetation types due to surface disturbance or groundwater drawdown. Changes to grasslands would primarily affect the habitat of the swift fox, Baird's sparrow, lesser prairie-chicken, gray vireo, and Texas horned lizard. Impacts would be minor due to availability of similar cover types nearby.	Impacts similar to the Proposed Action, except that there is greater potential for adverse impacts to sand dune lizards and lesser prairie-chickens. However, these impacts would be minimized by implementation of the BLM's required environmental protection measures.	Same as Proposed Action.	Same as Alternative B; however, pipelines have been rerouted to avoid sand dune lizard habitat to avoid potential for adverse impacts.

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Rangelands/ Livestock Grazing					
Animal unit months (AUMs) lost due to permanent facilities	No new disturbance.	125 AUMs lost; most (86) in Maroon Cliffs allotment. Most AUM reductions would occur on private land.	Existing Caprock pipeline option: 173 AUMs lost; most (88) in Maroon Cliffs allotment. New Caprock pipeline option: 152 AUMs lost; most (86) in Maroon Cliffs allotment Most AUM reductions would occur on private land.	Same as Proposed Action.	148 AUMs lost; most (88) in Maroon Cliffs allotment. Most AUM reductions would occur on private land.
Lands and Realty					
Effect on other land uses	None.	Temporary minor impacts on vehicle traffic in and near project area during construction; aboveground pipelines may affect land user travel and other land uses in the future.	Same as Proposed Action.	Temporary minor impacts on vehicle traffic in and near project area during construction.	Same as Proposed Action; however, 68% of the pipelines would be buried.
Recreation					
Effect on recreational uses	No additional disturbance.	5% of Hackberry SRMA acreage within potential subsidence area; increased public access by vehicles due to new roads; aboveground pipelines may obstruct OHV trails. Construction and operation activities may disrupt dispersed recreational users.	Same as Proposed Action.	5% of Hackberry SRMA acreage within potential subsidence area; increased public access by vehicles due to new roads. Construction and operation activities may disrupt dispersed recreational users.	Same as Proposed Action; however, 68% of the pipelines would be buried. All of the pipeline within Hackberry SRMA would be buried, resulting in fewer changes to OHV trails and access.

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Visual Resources					
Viewshed modifications	No change.	Slight to moderate modifications of the viewshed by the addition of man-made features. In compliance with VRM Class IV management.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Cultural Resources					
Effect on archaeological sites	None.	Potential direct effects to National Register of Historic Places (NRHP)-eligible sites from construction would be avoided or mitigated through data recovery. Potential loss of ineligible sites. Increased public access may result in more illegal collecting.	Same as Proposed Action.	Same as Proposed Action	Same as Proposed Action.
Hazardous Materials, Health and Safety					
Emergency plans	Existing emergency response and spill plans.	Development of new emergency response and spills plans, new health and safety training for new employees.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Socioeconomics, Environmental Justice					
Total Employment (# of employees)	629 current existing employees at Intrepid facilities near the project area.	In addition to existing work force: Short-term (peak) : 274 Long-term: 36	In addition to existing employees: Short-term (peak): 285 Long-term: 36	Slightly higher than the Proposed Action, fewer than Alternative B.	In addition to existing work force: Short-term (peak) : 272 Long-term: 36

Table ES-2 Summary of Environmental Impacts

Resources Affected	No Action	Proposed Action	Alternative B	Alternative C	Preferred Alternative
Indirect or Induced employment	N/A.	Short-term average: 194 Long-term: 19	Short-term average: 204 Long-term: 19	Slightly higher than the Proposed Action, fewer than Alternative B.	Same as the Proposed Action, but longer duration
Population changes	None.	+Short term: Up to 221 for construction Long term: +24 for operations.	+Short term: Up to 233 for construction Long term +24 for operations.	Same as Alternative B	Same as the Proposed Action
Housing demands	None.	Short term: Peak of 140 units, mostly motel rooms, RV camp sites and apartments in Carlsbad Long term: 10 units	Short term peak of 147 units, primarily in Carlsbad Long term 10 units	Slightly higher than the Proposed Action, fewer than Alternative B.	Same as Proposed Action.
Federal mineral royalties, annual	No change.	Between \$2.3 million and \$4.7 million in addition to existing for potash production.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Local property taxes, annual	No change.	Between \$0.53 million and \$1.05 million annually.	Slightly higher than Proposed Action due to higher capital investment.	Same as Alternative B.	Same as Alternative B.
Gross receipts, personal and corporate income taxes; life of project	No change	As much as \$9.8 million in addition to those from existing operations	Slightly higher than the Proposed Action	Slightly higher than the Proposed Action, lower than Alternative B.	Same as Alternative B
Environmental justice	No disproportionate adverse effects on minority or low-income populations.	Same as No Action.	Same as No Action.	Same as No Action.	Same as No Action.

Table ES-3 Reasonably Foreseeable Future Actions in the Region

Project	Brief Description	Approximate Location
1. Intrepid water-saving improvements	Planned upgrades to Intrepid's East Mine langbeinite process plant, projected to be completed by the end of 2011, anticipated to decrease Caprock water usage by approximately 700 to 800 gpm.	Intrepid East Mill
2. Polyhalite mining project	Intercontinental Potash is proposing a polyhalite mining operation on state and federal mineral leases and surface. The planned extraction method is underground room and pillar mining approximately 1,500 feet below the surface. Exploratory drilling is ongoing to evaluate the extent and quality of the potash formations. Water for processing is proposed to come from the Capitan Aquifer.	In five townships in Lea County, New Mexico, approximately 9 miles from the eastern boundary of the SPA
3. BLM vegetation management	As part of the Restore New Mexico program, the BLM plans several chemical treatments to manage invasive plants (mesquite and creosote). No surface disturbance is planned.	Within and near project area
4. Construction and maintenance for recreation	There is a proposal to construct a new parking lot in the Hackberry Recreation Area, approximately 0.5 to 1 acre in size. Trail maintenance is ongoing and involves little, if any, surface disturbance.	Hackberry Recreation Area
5. Creamer water project	A private landowner is proposing to develop a well on state land to supply saline water for sale to the oil and gas industry. The water may be coming from the Rustler Formation. Also proposing a pipeline running north up a small dirt road, crossing under the highway and ending at an old caliche pit where storage tanks would be installed.	Section 2, T20S, R30E (southeast of Clayton Lake)
6. Oil and gas drilling and production	Oil and gas drilling of new wells and production from existing wells would continue in the SPA according to BLM policy and approval. It is anticipated that oil and gas drilling operations would continue at the current rate of 75 per year in the SPA and an average of 1 per year within the project area. An average of 3.5 acres would be disturbed for each new well pad constructed.	In the SPA and project area

Table ES-3 Reasonably Foreseeable Future Actions in the Region

Project	Brief Description	Approximate Location
7. Derrick well	Intrepid recently converted an old core hole to a water supply well in the vicinity of the Rustler wells proposed for the project. The well extracts from the Rustler Formation, using the same source as the proposed new Rustler wells. Intrepid anticipates using this well at a rate of approximately 20 gpm to supplement processing water at the West Plant.	Section 1, T21S, R29E

Below is a summary of the projected cumulative impacts for key resources:

Geology and Minerals—Mining Subsidence

The CESA for mining subsidence is the project area. The proposed project and alternatives would result in approximately 4,354 acres of area at risk for additional subsidence. The additional subsidence due to solution mining is expected to be about 0.6 foot. Other projects in the vicinity of the project area are not anticipated to add to this projected subsidence amount or area. The proposed polyhalite mine would most likely contribute to regional subsidence due to mining, but this project is far outside the project area and subsidence impacts would not occur until long into the future.

Geology and Minerals—Potash

The CESA for potash resources is southeast New Mexico including Lea and Eddy counties. The proposed solution mining project estimates that around 6,000,000 tons of sylvite ore would be removed (or roughly 3,780,000 tons of potassium oxide equivalent), which represents roughly 3 percent of the cumulative production as of 2009. Based on the USGS’s estimate of 551 million short tons of resource (USGS 2009), the proposed solution mining recovery is a small fraction of the total remaining resource.

Geology and Minerals—Oil and Gas

The CESA for oil and gas is the Oil Potash Leasing Area (OPLA), defined by Oil Conservation Commission (OCC) Order R-111-P that encompasses most of the SPA. The HB In-Situ Solution Mine project area covers approximately 38,453 acres or about 11 percent of the OPLA. The use of horizontal drilling would enable access to oil and gas to be extracted without affecting the solution and conventional mining operations. The area encompassed by existing mine workings is large enough that directional drilling as a recovery method may be technically but not economically feasible in portions of the area. It would be reasonable to assume that economic constraints would limit the recovery of oil and gas resources in spite of technological advances. However, it may not be possible to estimate how much fluid minerals recovery would be lost or delayed until the end of potash mining. Production islands would continue to be established according to the procedures established by the 1986 Order and OCC Order R-111-P. The proposed project would not restrict oil and gas further than existing restrictions and would not prevent oil and gas exploration and production in the OPLA.

Water Resources—Groundwater

The CESA for groundwater resources is the SPA depicted in **Figure ES-1** and the Caprock area in western Lea County. Groundwater in the Clayton Basin will potentially be utilized by both the Proposed Action and the Creamer Project. The Creamer Project has been proposed by a private land owner to develop a well on state land to supply saline water for sale to the oil and gas industry. If both projects withdraw water from the Clayton Basin, overall drawdown would be greater than the estimated drawdown impacts estimated for the Proposed Action. The Creamer Project withdrawal quantities are unknown at

this time. Water withdrawn from the Caprock area would decrease under Intrepid's water-saving improvements at its East Mine process plant. The water savings would offset Caprock pumping under the Proposed Action, and would lessen the pumping impacts discussed under the Alternative B and Preferred Alternative pumping scenarios. Water withdrawn from the Derrick well would potentially limit the amount of Rustler water available for the HB In-Situ Solution Mine Project because there is a limited amount of water available for use from the Rustler but would not increase overall drawdown projected for the project area. Water needed for the proposed Intercontinental Potash polyhalite mine operation is proposed to come from a different aquifer than those proposed for the HB In-Situ Solution Mine Project so it is unlikely to change the regional groundwater drawdown or availability of water for other uses.

Water Resources—Surface Water

The CESA for surface water resources is the project area and nearby watersheds. Cumulative impacts to surface water resources primarily would be directly related to ground disturbance from construction for additional mining and oil and gas development because it may contribute to erosion and sedimentation. Up to approximately 260 acres may be disturbed annually from oil and gas development (less than 0.1 percent of the area). Additional minor disturbance would occur from the Creamer Project if a supply pipeline and storage tanks were constructed and from the proposed Hackberry SRMA parking lot. Because the surface disturbance would be scattered throughout the SPA and would be stabilized according to BLM requirements, this additional surface disturbance, in combination with the proposed in-situ solution mine project, would not have a major impact on surface water quality.