

Appendix D

Public Comments on Draft EIS and BLM Responses

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1.0 Introduction to Draft EIS Comments and Responses

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.

During the public comment period, 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, 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. The comments and responses are provided in the following sections where they are grouped by category. **Table 1** summarizes the number comments by category. Some comments covered more than one category; therefore the total number of comments listed in Table 1 exceeds the total number of comments received. Responses to form letters were only documented once.

1.1 Draft EIS Comments Received

The number of comments received during the public comment period are listed by category in **Table 1**.

Table 1 Comments Received by Category

| Category | # of Comments |
|-----------------------------|---------------|
| Air Quality | 3 |
| Alternatives | 15 |
| Cave/Karst | 14 |
| Climate Change | 1 |
| Cumulative Impacts | 8 |
| Editorial | 15 |
| Environmental Justice | 1 |
| Fire Prevention/Suppression | 1 |

| Category | # of Comments |
|---------------------------------|----------------------|
| Geology | 2 |
| Health/Safety | 5 |
| Mining | 7 |
| Mitigation Measures | 16 |
| Monitoring | 13 |
| NEPA Process | 10 |
| Oil and Gas | 13 |
| Project Description | 2 |
| Project Support | 19 |
| Reclamation | 3 |
| Riparian Areas/Wetlands | 1 |
| Socioeconomics | 30 |
| Soils | 4 |
| Subsidence | 11 |
| Threatened & Endangered Species | 10 |
| Vegetation/Botany | 6 |
| Water Resources | 36 |
| Wildlife | 10 |
| Total | 256 |

1.2 People Submitting Form Letters

Form Letter 1 responses are listed in the following sections under Philip Huett and Form Letter 2 responses are listed under Chancy Sallee. Following is a list of all the parties who submitted each form letter.

Form Letter 1

Allred, Mainard
Amos, Linda
Beaumon, Cher
Beaumon, Rene
Beavers, Krystal
Bhusari, Amol
Bluth, Marcus
Brazealf, John
Brown, Jacki
Brown, Ziggy
Burkham, Lewis
Burnett, Jerry
Bush, Jim
Caldron, Aurelio
Campis, Isaac

Castillo, Adam
Castillo, Lyne
Caughen, James
Clovin, Jonny
Colvin, Johnny
Compos, Marc
Conteas, Micheal
Cox, Rodger
Crumley, Glenda
Crump, James
Cullen, Cheryl
Daley, James
Day, Richard
Dickman, Kevin
Dix, Neil

Dominguez, Rudy
Drooz, Herbert
Easten, Douglas
Esboda, Pedio
fine, Jimmie
Galvin, Steve
Goad, Cathy
Gooch, Stan
Granger, Rudy
Harper, Trent
Heine, Lou
Henderson, Danny
Herndon, Thomas
Higgins, Loyd
Holub, Joshua

Jrotten, Jay
Klein, David
Lammers, Mark
Lardie, Jacquelyn
Larochelle, William
LaVrana, Mary
Logsdon, Randy
Mailing, Jae
Martinez,
Martinez, Domingo
McCutcheon, Steve
McDonald, Tama
McWilliam, Monty
McWright, Nolan
Mee, Edmond
Michaelson, Robert
Mickelson, Kurt
Miller, Travis
Moore, Paul
Moore, Stephen
Nicholas, Brian
Nicholas, Joe

Oalstr, Eddie
Orosco, Chris
Ortance, Robert
Osell, John
Palmer, Deryl
Palmu, Deryl
Patterson, Dallas
Patton, Richard
Pool, Brian
Pratec, Harold
Pryor, Rolan
Putnam, Melvin
Rayos, Jessie
Reyes, Frank
Roberson, C
Rodriguez, Judy
Runner, Michael
Russell, Podney
S, Scott
Sakes, Raymond
Samaniego, Mark
Sanyo, Mark

Smith, Scott
Smith, Stewart
Strater, Ted
Sullivan, Jared
Torres, Roy
Van Loop, W R
Vasquez, S
Villa, Mark
Vrana, Mary
Walls, Raymond
Webb, Jackie
Wehent, Mark
Wiggins, Linda
Williams, Avery
Williams, David
Wise, Eric
Wordi, Bobbi
Zell, John

16 additional Intrepid Potash
employees with unreadable
names

Form Letter 2

Bengochea, Talon
Bunch, Craig
Chavarria, Cesar
Gutierrez, Miguel
Jemilo, Joe
Johnson, Joel
King, Mike
Morris, Jimmy
Murrill, Valerie
Neville, Brad
Peine, Sam
Strickland, Don
Teal, Jim
Waddle, Tamara
Sallee, Chancy

Air Quality

Comment:

EPA encourages the use of clean, lower-emissions equipment and technologies to reduce pollution. Further, EPA's final Highway Diesel and Nonroad Diesel Rules mandate the use of lower sulfur fuels in nonroad and marine diesel engines beginning in 2007. Please include a discussion detailing measures the project will incorporate to reduce equipment emissions and the anticipated reductions in emissions.

Smith, Rhonda; USEPA Region 6

Response:

Compliance with all relevant federal and state laws, regulations, and policies would apply under all alternatives and has been assumed. No exceedances of state and federal standards and issues related to high sulfur fuels have been identified for this project. While mitigation measures can be discussed in an EIS even if impacts are not projected to be significant, in order to comply with CEQ NEPA guidance to minimize the length and complexity of EIS contents, detailed discussions of measures to solve problems not identified as of primary concern will not be added to this EIS. Intrepid submitted an application to the NMED-AQB for a Minor NSR permit for the HB Mill, which is currently under review. If the project goes forward, Intrepid will have to comply with any requirements of this permit.

Comment:

Section 4.5.8-Mitigation Measures (p. 4-61) indicates that recommended additional mitigation measures for project alternatives include development of a dust control plan prior to the start of construction activities. EPA encourages development of a dust control plan to govern construction activities, and any such plan should be in agreement with any applicable natural events action plans or erosion control regulations for the area.

Smith, Rhonda; USEPA Region 6

Response:

Comment is noted. That is the intent of the recommendation for a dust control plan in the referenced section.

Comment:

Any demolition, construction, rehabilitation, repair, dredging or filling activities have the potential to emit air pollutants and we recommend best management practices be implemented to minimize the impact of any air pollutants. Furthermore, construction and waste disposal activities should be conducted in accordance with applicable local, state and federal statutes and regulations.

Smith, Rhonda; USEPA Region 6

Response:

As stated in the Draft EIS, page 2-21, section 2.4.5, compliance with all relevant federal and state laws, regulations, and policies would apply under all alternatives. This compliance is assumed as part of the effects analysis. A dust control plan will be developed prior to construction.

Alternatives

Comment:

Alternative B - Supplemental Water Sources - is better because it provides greater operational flexibility while still using only water to which Intrepid has existing water rights. We strongly prefer to use Rustler groundwater for the HB Project because of its salinity and proximity to the HB Project, but the ability to use Caprock water would provide added flexibility to ensure we can fully implement and operate the project.

Huett, Philip

Response:

BLM will consider all comments and recommendations before making a final decision. Note that the agency preferred alternative may select from any of the alternatives analyzed and may not be a complete alternative as analyzed in the Draft EIS.

Comment:

The description of the Proposed Action does not mention the fact that, as a result of previous mine operations, the three northern Rustler wells are contaminated with lead acetate. As stated in the DEIS analysis of impacts to groundwater resources (page 4-21), and through personal communication with representatives of Intrepid (Kevin Ryan, Director of Technical Services) and the NM Environment Department (Larry Shore, Groundwater Quality Bureau), lead would have to be removed from this water before it could be used in injectate brine. Removal of metals from saline water is a complicated proposition, involving an on-site treatment plant with a toxic waste-stream, which would comprise a major component of the in-situ mining operation. BLM needs to address the water treatment option, the use of contaminated water, and/or the adequacy of water volume from only the four southern Rustler wells in the NEPA analysis, before the Proposed Action is given further consideration.

Wunder, Matthew; NM Dept of Game and Fish

Response:

As noted in the comment, the description of the Proposed Action does not mention the lead contamination. However, in the first paragraph of the description of Alternative B (page 2-15 of the Draft EIS), it states that the northernmost Rustler wells were not included in this alternative due to concerns over high lead levels. A statement will be added to the Proposed Action disclosing the lead contamination issue with the northern Rustler wells and making it clear that treatment would be required. A statement on the lead contamination was included in the Draft EIS Section 3.3.2.2, Project Area Hydrogeology and Groundwater Chemistry, under the "Rustler Formation Near Rustler North" heading. One assumption of the impact analysis, as stated on page 4-21 of the Draft EIS, is that lead must be removed before use as injectate. It would not be to Intrepid's benefit to use water contaminated with lead in the development of potash fertilizer. Note that the agency preferred alternative may select parts from any of the alternatives analyzed in the Draft EIS, so portions of the Proposed Action could be selected without using the contaminated wells. Our initial research showed that the process of removing lead from saline water is complex and difficult. There is currently insufficient information on the water chemistry and the nature of the lead contamination. Detailed data on the water quality, the nature of the lead contamination, the quantity of water to be treated as well as other information would be required before details of the treatment plant could be determined. Gathering the required information and designing a treatment process would be time consuming and expensive if the alternative is not chosen. For this reason treatment of the lead was considered a mitigation measure that would be designed and implemented only if this alternative were selected and was not discussed in detail in the EIS. We do not believe that the impacts of the treatment would significantly change the overall impacts of the project or alter our decision.

Cave/Karst

Comment:

The presence of the water affects the humidity levels of the caves. Some species of bats require a high humidity level to use a cave for a nursery or a roost.

Harrington, Ken

Response:

Comment is noted and will be considered.

Comment:

Para 1.4.2, Table 1-1, Page 1-5, Major Federal and State Law, Regulations, and Applicable Permits:
Add: Federal Cave Resources Protection Act of 1988.

Harrington, Ken

Response:

While this table was not intended to list all regulations, this one will be added.

Comment:

Intrepid will work with BLM to develop a groundwater monitoring program in order to minimize any potential impacts to karst and caves.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This monitoring plan is included as a mitigation measure on page 4-15 of the Draft EIS. Any updates to this planning effort will be included in the Final EIS.

Comment:

Page ES-7. Comment. The summary on caves in Table ES-2 reports that, as to the Proposed Action, "42 to 43 known caves in the HB Project area would be affected by drawdown" and, as to Alternative B, "18 to 38 known caves in the project area would be affected by drawdown." Given that these statements are based on predictions in groundwater models and uncertainty regarding structural and/or hydraulic connection between cave features and the Rustler aquifer(s), Intrepid respectfully suggests that BLM replace the word "would" with the word "may."

Ryan, Kevin; Intrepid Potash, Inc.

Response:

While the drawdown predictions based on the groundwater models were generated using the best available data, BLM recognizes that there are many unknowns related to the water levels and potential indirect effects on caves in the project area. So, while not all potential impacts should be presented as "may" instead of "would", the potential impacts to caves is more speculative and will be changed in the summary tables in Chapter 2 and the Executive Summary and in the discussions in Section 4.2 related to cave impacts.

Cave/Karst

Comment:

Table 2-11 indicates that groundwater drawdown would affect 42 to 43 caves under the Proposed Action or Alternative C, and 18 to 38 caves under Alternative B. These caves have not been surveyed in detail for biological resources that may depend on water. We recommend that the Record of Decision for this project require the applicant to conduct such surveys, and for amendment contingent on survey results not indicating a prediction of significant adverse impact to biological resources.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Page 4-15 of the Draft EIS includes a recommended mitigation measure to develop a groundwater monitoring plan, complete a biological inventory of cave species, and develop adaptive management strategies to minimize adverse effects on species and water in caves. The BLM decision-maker will consider your comment before finalizing the Record of Decision.

Comment:

Lowering of the water level in the perched water table would stop all potential future growth of the cave except for any surface waters that might run in after a rain storm.

Harrington, Ken

Response:

It is uncertain if drawdown in the Rustler Aquifer will impact the perched aquifers of the caves. The projections of groundwater drawdown are based on the best available data and the use of models, with many unknowns related to the water levels and species in the existing caves. For this reason, the mitigation measures included in the Draft EIS on page 4-15 recommend development and approval of a monitoring plan as well as completion of a biological inventory of the caves and adaptive management strategies in consultation with BLM to minimize drawdown impacts. If this plan is completed or if further decisions are made before completion of the Final EIS, the updated information will be included.

Cave/Karst

Comment:

Section 4.2.8.2, Page 4-15 Comment. The third bullet in this section, second line, states implementation of a plan should include a biologic inventory of cave species before groundwater pumping begins. Intrepid is extremely concerned with this requirement as the cave locations are not known by Intrepid and the area has already been subject to significant past mining and oil and gas impacts. This requirement has significant potential to delay the project. Additionally, karst and cave features may not contain water, and groundwater pumping may not affect the water level in the caves. We respectfully recommend that this requirement be removed. Intrepid has committed to working with the BLM to install groundwater monitoring wells adjacent to the critical karst areas as part of the groundwater monitoring program and Intrepid believes that monitoring of the water levels in the known cave and karst areas will provide adequate protection of biologic species that may be in the caves and karsts.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This mitigation measure is included as a recommendation that would enable BLM to monitor and apply adaptive management to minimize adverse impacts to important caves. If this mitigation measure is selected in the Record of Decision, BLM will work with Intrepid to identify the locations of the important caves in order to determine which should be surveyed and monitored. At this stage, this mitigation measure is a recommendation by the resource specialist and should be left in the EIS for consideration by the decision-maker, who can choose to modify or exclude this mitigation measure as part of the Record of Decision.

Comment:

Intrepid has also committed to installing a groundwater monitoring network to evaluate drawdown impacts to various natural resources such as karst / caves, springs / seeps, etc.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This monitoring plan is included as a mitigation measure on page 4-15 of the Draft EIS. Any updates to this planning effort will be included in the Final EIS.

Comment:

Section 4.2.4.2, Page 4-6 Comment. The first sentence states that caves and caves resources would not be affected under the No Action Alternative. Intrepid respectfully submits that conventional mining in the area has already caused subsidence and that subsidence has potential to have impacted the caves and cave resources in the area.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Past conventional mining and subsidence contributed to the current conditions described in Chapter 3. The impacts discussed under the No Action Alternative are those that would occur in the future under current mining operations and maintenance activities, without implementation of the proposed project.

Cave/Karst

Comment:

With the project removing large quantities of water from the Rustler Formation for use in the project, there will be a resulting draw down of all local water tables. The water levels in these caves will disappear. If this is allowed to occur, any organisms that rely on this water for life, will cease to be. This must not be allowed to happen.

Belski, Dave

Response:

The projections of groundwater drawdown are based on the best available data and the use of models, with many unknowns related to the water levels and species in the existing caves. For this reason, the mitigation measures included in the Draft EIS on page 4-15 recommend development and approval of a monitoring plan as well as completion of a biological inventory of the caves and adaptive management strategies in consultation with BLM to minimize drawdown impacts. If this plan is completed or if further decisions are made before completion of the Final EIS, the updated information will be included.

Climate Change

Comment:

Intrepid appreciates BLM's incorporation of climate change analysis into the DEIS. BLM provided background information on regional climate and existing climate change conditions in section 3.6 (pages 3-69 to 3-72) of the DEIS. Specifically, BLM discussed greenhouse gases, the sources of greenhouse gases, the impacts from climate change and the limitations on predicting impacts to global climate change from a particular local decision.

BLM's approach in the DEIS is entirely consistent with guidance established or proposed by the United States Geological Survey ("USGS"), the Environmental Protection Agency, the Solicitor for the Department of the Interior and the Council on Environmental Quality ("CEQ"). Because this guidance strengthens BLM's approach, it is discussed below. BLM may wish to refer to the guidance when it finalizes the HB EIS.

In the DEIS, BLM recognizes these limitations on quantifying climactic impacts from a particular project. DEIS at page 4-61. Specifically, BLM acknowledges that techniques for quantifying GHG emissions are in the developmental stages and thus acknowledges that the specific effects of human activities can only be evaluated qualitatively. *Id.* at page 3-72. Despite these limitations, BLM quantified the potential contribution of GHGs from the HB Project. *Id.* at pages 4-61 to 4-64. BLM's quantification of these GHG emissions is consistent with (and in fact goes beyond) draft CEQ guidance on evaluating effects on proposed Federal actions on climate change.

BLM's analysis on climate change in the DEIS is consistent with CEQ's guidance.

After quantifying the GHG emissions from the HB Project, BLM evaluated these GHG emissions in the context of United States GHG emissions, concluding that no significant impacts to global climate change from the proposed project would occur and that the cumulative impacts to climate change from the project and the vicinity of the proposed project would be negligible on a regional and global scale. See DEIS at pages 4-64, 5-7.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and will be considered.

Cumulative Impacts

Comment:

Section 2.5, Page 2-31 Comment. In Table 2-10, we recommend revising the description of Intrepid's water saving improvements to show that "Due to Intrepid's water conservation program and process improvements at the East Plant, Intrepid expects to reduce current use of Caprock water by approximately 700 to 900 gallons per minute following the full commissioning of the changes at the East Plant." Further, as discussed previously, the reference to the "Cramer water project" should be to the "Creamer water project." Also, as discussed previously, Intrepid has entered into a water option agreement with Roy Creamer that ensures Intrepid's access to purchase up to 90 acre-feet (56 gpm) per annum of water from the well referenced in Table 2-10. If Intrepid exercises the option, it is unlikely that the Creamer water project would go forward.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Updates to the change in water usage will be made in this table for the Final EIS as will the correction to Creamer's name. While the Creamer water project may not move ahead, the EIS needs to present that possibility. The table will also be updated to state that increased water usage from this well may occur if Intrepid exercises the option. This must be considered under cumulative impacts because it would add to the predicted groundwater drawdown in the project area.

Comment:

Section 5.1, Page 5-2, Table 5-1 Comment. In the first row, second column, Intrepid respectfully recommends revising the description of Intrepid's water saving improvements as follows: "Due to Intrepid's water conservation program and process improvements at the East Plant, Intrepid expects to reduce Current use of Caprock water by approximately 700 to 900 gallons per minute following the full commissioning of the changes at the East Plant." In the fifth row, the reference to the "Cramer water project" should be to the "Creamer water project." Please also see Intrepid's comments on Table ES-3.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Updates to the change in water usage will be made in this table for the Final EIS as will the correction to Creamer's name.

Comment:

My first priority, when reviewing the HB Project proposal, is WIPP's mission and the safety of its employees. It is clear from reviewing the details of Intrepid's plan that none of the proposed alternatives for the HB Project will interfere with WIPP in any way. WIPP is located more than 10 miles from the outer perimeter of the HB Project boundary and none of WIPP's infrastructure would be put at risk.

Sharif, Farok

Response:

Comment is noted and will be considered.

Cumulative Impacts

Comment:

Impacts on Caprock Wells Would Be Mitigated. Intrepid is aware that, under Alternative B, drawdown in the Caprock area may increase over the drawdown predicted under Alternatives A and C. DEIS at pages 4-43, 4-44. These impacts, if any, would be mitigated by the water conservation program and process improvements that Intrepid is planning for its East Plant. The program and improvements include upgrades to Intrepid's East Mine langbeinite processing plant that are anticipated to decrease Caprock water usage by approximately 700 to 900 gpm following the full commissioning of the changes at the East Plant. Accordingly, to the extent Caprock water is needed for the HB Project, Intrepid's Caprock water conservation efforts are expected to significantly offset any increased use for the HB Project. *Id.* at page 5-5.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Updates to the change in water usage will be considered in the Final EIS. In the Draft EIS, the possible offset of 600 to 700 gpm was considered in Chapter 5, so the change would decrease Caprock water usage by up to 200 gpm more than what was already considered.

Comment:

EPA recommends the FEIS include geographic and temporal boundaries for analyzing the cumulative impacts on all resources of concern. The analysis should include soil, vegetation, and surface and ground water, including domestic, agricultural, industrial, and commercial use. Groundwater withdrawal is projected to continue into the future. This will affect surface water quality and quantity and potentially contribute to the degradation of vegetation, soil, and wildlife.

Smith, Rhonda; USEPA Region 6

Response:

The geographic boundaries of the cumulative impact analysis are described for each resource in Chapter 5. Additional information on the length of time assumed for cumulative impact analysis (at a minimum, this is the 28-year period of the proposed project) will be added. The resources, plus others, are included in Chapter 5 of the Draft EIS. Conclusions related to the direct and indirect effects from the project, such as that from groundwater withdrawal, are described under each resource in Chapter 4 of the Draft EIS.

Comment:

Due to our water conservation program and process improvements at our East Plant, we expect to reduce our use of Caprock water by 700 - 900 gallons per minute by the end of the year. As a result, if we need to use Caprock water for the HB Project, we expect our Caprock water conservation efforts to significantly offset any increased use for the HB Project.

Huett, Philip

Response:

Updates to the change in water usage will be made in this table for the Final EIS.

Editorial

Comment:

Pages ES-5 Comment. In the paragraph titled "Alternative A-Proposed Action," Intrepid respectfully requests changing "Intrepid's mine operation and closure plan" to "Intrepid's HB In-Situ Solution Mine Operation and Closure Plan."

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Change will be made.

Comment:

Page ES-17. Comment. In the paragraph "Water Resources-Groundwater," the reference to the "Cramer Project" should be to the "Creamer Project." Also, as discussed above in Intrepid's comments on page ES-16, Intrepid has entered into a water option agreement with Roy Creamer that ensures Intrepid's access to purchase up to 90 acre-feet (56 gpm) per annum of water from the well referenced in this paragraph. If Intrepid exercises the option, it is unlikely that the Creamer Project would go forward.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Updates to Creamer's name will be included in the Final EIS. While the Creamer water project may not move ahead, the EIS needs to present that possibility. The table will also be updated to state that increased water usage from this well may occur if Intrepid exercises the option. This must be considered under cumulative impacts because it would add to the predicted groundwater drawdown in the project area.

Comment:

Section 3.8.2, Page 3-82 Comment. This section is titled "Aquatic Species," but includes discussion of many non-aquatic species such as bats, fox, and birds. Intrepid respectfully suggests that BLM move its discussion of non-aquatic species to a different section of the DEIS, such as a section for mammals and birds.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This is a formatting error. The section Sensitive Species should be 3.8.3 and not under Aquatic Species. Change will be made.

Comment:

Section 4.2.5.1, Page 4-7 Comment. In the fourth full paragraph, line 5, Intrepid respectfully recommends that the citation to Intrepid Potash, Inc./Shaw 2008b should be supplemented with a citation to RESPEC Consulting & Services, "Evaluation of Ground Subsidence Over the Intrepid HB Mines, Carlsbad, New Mexico," Topical Report RSI-2164 (April 2011).

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Reference to this report will be added.

Editorial

Comment:

EDITORIAL COMMENTS ON THE HB IN-SITU SOLUTION MINE PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT ABSTRACT PAGE

Comment. Correct the publication date of the NOA and the date by which comments must be received by BLM: April 15, 2010 should be April 15, 2011, and June 13,2010 should be June 13,2011.

EXECUTIVE SUMMARY Page ES-3 Comment. In the third paragraph, second line, change "their" to "its." The third paragraph should therefore read: "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." (emphasis added).

CHAPTER 1

Section 1.2, Page 1-3. Comment. In the sixth paragraph, second line, change "their" to "its." The sixth paragraph should therefore read: "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." (emphasis added).

CHAPTER 2

Section 2.3.2, Page 2-2 Comment. Language is missing from the first sentence of this section, which currently states: "This alternative would involve the injection of saline brine the SPA to leach the in-place water soluble minerals from unmined formations."

Section 2.3.5, Page 2-4 Comment. In the first sentence of this section, insert the word "the" immediately before the words "project area." In the second sentence of this section, delete the word "give" which currently appears immediately before the word "remove."

Section 2.3.5, Page 2-5 Comment. In the second paragraph, last sentence, insert the word "a" immediately before the word "location."

Section 2.4.5, Page 2-23 Comment. In the sixth bullet titled "evaporation ponds," delete the word "a" immediately before the word "geosynthetic."

CHAPTER 3

Section 3.2.1, Page 3-1 Comment. In the second line of this section, change "describes" to "describe."

Section 3.2.1.3, Page 3-8 Comment. In the first paragraph, lines 4-5, fix the typographical error in the clause "but more extensive outcrops area occur to the east." In the second paragraph, fourth line, change "is distinguished" to "are distinguished."

Section 3.2.2.1, Page 3-10 Comment. In the first paragraph, line 6, insert a "." after 1929. In the third paragraph, line 6, correct the spelling of twelfth.

Section 3.2.2.1, Page 3-11 Comment. In the first paragraph, line 3, change "are established" to "were established."

Section 3.2.3.1, Page 3-17 Comment. In Table 3.2-2, there is a typographical error in the second "Rating Definition." Delete the word "a" immediately after the word "contain."

Section 3.2.3.2, Page 3-21 Comment. In the first paragraph, second line, delete the word "the" immediately before the year "1973."

Section 3.2.3.2, Page 3-33 Comment. In the section titled "Bell Canyon Aquifer," fifth line, change "have moderate flow potential" to "has moderate flow potential."

Section 3.3.2.1, Page 3-42 Comment. In the fifth paragraph, line 2, insert a "." after the word "thick."

Section 3.3.2.1, Page 3-44 Comment. In the fifth paragraph, line 3, change "are indicative" to "is indicative." In the fifth paragraph, line 6, change "maybe" to "may be."

Section 3.3.2.2, Page 3-46 Comment. In the second paragraph, line 1, change "Alluvial" to "Alluvial."

Section 3.4.2, Page 3-50 Comment. In the first full paragraph, insert a "," after "component names."

Section 3.4.2, Page 3-56 Comment. Revise the following sentence in the first paragraph to eliminate the typographical error: "Approximately 65 percent of the existing pipeline corridor has poor soil limitations related to shallow excavations is." in the third line, change "is previously" to "was previously."

Comment. Revise the following sentence in the final paragraph to eliminate the typographical error: "Environmental reports

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(OCD 2009a) indicate that spills of saline produced water have occurred within the project area and saline surface soils may be present however, may not be accurately quantified by the current soil survey due to the timeframe and scale of mapping."

Section 3.5.1.1, Page 3-59 Comment. In the first line of the second paragraph of this section, change "NAAQS establishes" to "NAAQS establish."

Section 3.5.1.3, Page 3-64 Comment. In the second full paragraph, line 7, change "affects" to "effects."

Section 3.7.1, Page 3-72 Comment. In the first paragraph, line 11, change "platuea" to "plateau." In the second paragraph, line 7, change "cover types" to "cover type."

Section 3.7.1, Page 3-75 Comment. In the first paragraph, line 6, change "transision" to "transition." In the second paragraph, line 4, change "littleleaf sumac" to "littleleaf sumac."

Section 3.7.2, Page 3-78 Comment. In the paragraph titled "Scheer's Beehive Cactus," third line, change "small cluster or stems" to "small cluster of stems."

Section 3.7.3, Page 3-78 Comment. In the first paragraph, line 2, change "caused" to "causes."

Section 3.7.3, Page 3-80 Comment. In the third paragraph, second line, insert the word "on" after the word "based." In the fourth paragraph, third line, change the word "long" to "along."

Section 3.8.1.1, Page 3-81 Comment. In the first paragraph, line one, change "within project Area" to "within the project area."

Section 3.8.2, Page 3-86, Table 3.8-1 Comment. In the second row, third column, change "fer rets" to "ferrets."

Section 3.8.2, Page 3-91, Table 3.8-1 Comment. In the first row, fourth column, change "unlikley" to "unlikely."

Section 3.8.2, Page 3-101 Comment. In the third paragraph, line 3, change "specie" to "species."

Section 3.8.2, Page 3-102 Comment. In the paragraph on the sand dune lizard, sixth line, change "activates" to "activities."

Section 3.12, Page 3-114 Comment. It appears there should be two more bullets made: one for "Adjacent Scenery = 0" and one for "Scarcity = 1."

Section 3.13.5.2, Page 3-119 Comment. In the second paragraph, line 9, change "sties" to "sites."

Section 3.15.1, Page 3-121 Comment. In the second to the last line on this page, delete the word "a" before the number 15.

Section 3.15.3, Page 3-123 Comment. In the first full paragraph, second line, change "both of values" to "both values."

Section 3.15.4, Page 3-124 Comment. In the second paragraph of this section, line one, change "proceeding" to "preceding."

Section 3.15.11, Page 3-132 Comment. In the third bullet of this section, change "Determine" to "Determination of." In the second to the last line on the page, insert the word "a" immediately before the word "ranch."

CHAPTER 4

Section 4.2.1.2, Page 4-1 Comment. In the first line of this section, insert the word "the" after the words "effects to."

Section 4.2.2.1, Page 4-3 . Comment. In the second paragraph, line 3, change "that that" to "that."

Section 4.2.3, Page 4-4 Comment. In the first bullet, change "for foreseeeable future" to "for the foreseeeable future."

Section 4.2.9, Page 4-15 Comment. In the first line of this section, insert the word "be" after the word "would."

Section 4.2.9.1, Page 4-15 Comment. In the third paragraph, line 2, change "extend" to "extended."

Section 4.2.9.2, Page 4-16 Comment. In the first paragraph, line one, insert the word "a" immediately before the word "number."

Section 4.2.9.5, Page 4-16 Comment. In the first paragraph, line four, change "area" to "are."

Section 4.3.3, Page 4-21 Comment. Fix the typographical error in the first line by changing "land" to "and."

Section 4.4.2, Page 4-45 Comment. In the first paragraph, line one, change "were" to "was."

Section 4.4.5, Page 4-48 Comment. Revise the first paragraph, second sentence, which states: "Approximately 21 percent of the initial disturbance would occur on highly wind erodible soils while long-term disturbance would occur approximately 19 percent of wind erodible soils."

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Section 4.5.2, Page 4-52 Comment. In the first paragraph, line 5, change "Mobil" to "Mobile."

Section 4.5.5, Page 4-53 Comment. In the first paragraph, line one, change "new emission sources" to "new emissions sources."

Section 4.5.5.1, Page 4-55 Comment. In the third paragraph, line 3, change "Fugitive emission" to "Fugitive emissions."

Section 4.6.5, Page 4-63 Comment. The first sentence is incomplete, and should be revised.

Section 4.7.5.1, Page 4-66 Comment. In the final paragraph on this page, first sentence, insert the word "be" immediately after the first appearance of the word "would."

Section 4.7.5.1, Page 4-67 Comment. Fix the typographical error in the first paragraph, second line, second sentence: "within currently within."

Section 4.7.5.2, Page 4-68 Comment. The fourth paragraph of this section, third line, second sentence, is missing language and should be revised.

Section 4.7.6.1, Page 4-71 Comment. In the first paragraph, seventh line, insert the word "be" after the word "would."

Section 4.8.5.1, Page 4-75 Comment. In the third paragraph of this section, line 7, change "replace" to "replaced."

Section 4.8.5.1, Page 4-77 Comment. In the third paragraph, line 7, revise the sentence that begins "If migratory birds attempt ..." The sentence is currently incomplete.

Section 4.8.5.3, Page 4-78 Comment. Please revise the third paragraph of this section.

Section 4.9.5, Page 4-82 Comment. In the third paragraph, line 4, fix the typographical error in the clause "long-term loss of from the placement of permanent facilities."

Section 4.9.6, Page 4-83 Comment. In the second paragraph, line 4, insert the word "be" immediately after the word "would."

Section 4.9.8, Page 4-84 Comment. In the third bullet, line one, change "are" to "is."

Section 4.11.3, Page 4-87 Comment. In the first bullet, change "as well affect" to "as well as affect."

Section 4.15.3, Page 4-98 Comment. In the first paragraph, second line, delete the words "if there were."

Section 4.15.4.1, Page 4-99 Comment. In the first paragraph, line 2, change "foreseeable" to "foreseeable future." In the third paragraph, line 5, change "The No Action" to "The No Action Alternative."

Section 4.15.5, Page 4-100 Comment. In the fourth line, insert the words "would occur" at the end of the sentence.

Section 4.15.5.1, Page 4-103 Comment. In Table 4.15-2, the numbers in the second column require adjustment. In paragraph 3, line 2, change "it" to "in."

Section 4.15.6.1, Page 4-108 Comment. In the second paragraph, line 2, should the additional number of jobs be 20, not 23? In the fourth paragraph, line 1, change "support" to "supported."

Section 4.15.6.2, Page 4-109 Comment. In the third paragraph, line 1, change "Alternative" to "Alternative B." In the second line of the third paragraph, change "would among" to "would be among." In the fourth paragraph, line 3, change "28- to 35-year production life" to "28-year production life."

Section 4.15.6.4, Page 4-110 Comment. In the fourth paragraph, line 1, change "leaves projected production and life of project" to "leaves the projected production and life of the project."

Section 4.15.7.1, Page 4-111 Comment. In the fourth paragraph, line 1, change "support" to "supported."

Section 4.15.7.3, page 4-111 Comment. Delete the word "demand" immediately after the word "seasonal."

Section 4.15.7.4, Page 4-112 Comment. In the fourth paragraph, revise the first sentence to read "Alternative C leaves the projected production and life of the project unaffected."

Section 4.15.8, Page 4-112 Comment. In the first paragraph, line 2, insert the word "future" immediately after the word "foreseeable."

Section 4.15.8, Page 4-113 Comment. In the fourth paragraph, line 2, change "support" to "supported." In the seventh paragraph, line 3, change "short-term, benefits" to "short-term benefits."

CHAPTER 5

Section 5.2.2.1, Page 5-4 Comment. In the second line, change "has" to "have."

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Section 5.2.4, Page 5-5 Comment. The second sentence is unclear, and should be revised.

Section 5.3.1, Page 5-5 Comment. In the first paragraph, line 4, please clarify which area is being discussed in the parenthetical- "(less than 0.1 percent of the area)." In the fifth line, change "Cramer" to "Creamer. "

Section 5.3.2, Page 5-5 Comment. In the first paragraph, lines 1,4, and 6, change "Cramer" to "Creamer."

Section 5.4, Page 5-6 Comment. In the second paragraph, line 5, change "decreased" to "decrease." In the third paragraph, line 1, change "Cramer" to "Creamer."

Section 5.5, Page 5-6 Comment. In the first paragraph, lines 1 and 2, change "emission sources" to "emissions sources."

Section 5.6, Page 5-7 Comment. In the first paragraph, lines 7-8, change "project including GHG emissions from construction amount" to "project, including GHG emissions from construction, amount."

Section 5.8, Page 5-8 Comment. Please revise the second sentence of this section, as it is currently unclear.

Section 5.8.1, Page 5-8 Comment. In the first paragraph, line 4, change "species like mule deer that" to "species, like mule deer, that." Insert a "." at the end of the last sentence of the first paragraph.

Section 5.10, Page 5-9 Comment. In line 5, change "CSA" to "CESA."

Section 5.16, Page 5-13 Comment. In the first paragraph, lines 1 and 6, change "Cramer" to "Creamer."

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Edits to the text to correct typographic errors will be made where appropriate.

Comment:

Section 4.3.9.2, Page 4-43 Comment. In the second paragraph, line 3, Intrepid recommends striking "decrease compared to the Proposed Action" and substituting "increase compared to the Proposed Action."

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Sentence will be changed as follows: "Groundwater depletions of seeps, springs, and underflow to Nash Draw would be less than under the Proposed Action."

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Comment:

Section 4.2.5.1, Page 4-11 Comment. The third paragraph, third sentence, states "Active and abandoned oil wells and a salt water disposal well extend through the inactive mine workings targeted for solution mining (see Figure 3.2-8)." As explained in Intrepid's General Comments, the reference to Figure 3.2-8 should be replaced with a reference to Figure 3.2-7. The quoted language and Figure 3.2-7 should also be revised to make clear that no active oil or gas wells will exist in the HB Project's proposed flood zones. This comment also applies to the fourth bullet on page 4-11, which states: "Fluids can enter the well either through an improperly plugged well, or through active wells that are in communication with the salt section."

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Change to figure number will be made. The map is correct as are the statements that the wells extend into the targeted workings. A statement will be added in this section of Chapter 4 to state that no active wells are located within the proposed flood zone. Because fluids from wells can enter the salt section or the mine workings, this statement is correct and will not be changed. The salt section and the inactive workings extend beyond the flood pool.

Environmental Justice

Comment:

The importance of preventing contamination of the surface water and groundwater cannot be emphasized enough. Low-income, minority farmers downstream of the Pecos River depend on irrigation from the river to grow their crops, and if the Pecos River or the underlying aquifers become contaminated with petroleum or brine water, these farmers would be adversely impacted.

Smith, Rhonda; USEPA Region 6

Response:

Comment is noted. Compliance with BLM and other federal and state laws and permits is intended to avoid surface water and groundwater contamination.

Fire Prevention/Suppression

Comment:

Risk of fire to plastic pipelines on the surface. If you bury you reduce the risk to exposing the pipeline to fire and reduce the width cleared due to fire concerns.

Shore, Lawrence; NM Environment Department, Ground Water Quality Bureau

Response:

Comment is noted and will be considered.

Geology

Comment:

The DEIS does not contain the data needed to evaluate the potential for collapse to be caused by the proposed project.

Smith, Rhonda; USEPA Region 6

Response:

The DEIS provides summary information of the analysis that was presented in the geology technical support document identified in the reference list as AECOM 2010a. This report will be added to the list of source information in Chapter 4 to clarify that it is incorporated by reference per NEPA guidance.

Comment:

The geology section is complete and comprehensively presented. The Permian of SE NM is perhaps some of the most studied and well documented section of rocks in the world and the geological information presented within the DEIS is bibliographical to the existing literature.

Thomas, Charles; NM Mining and Minerals Division

Response:

Comment is noted.

Health/Safety

Comment:

I am aware that Intrepid has successfully operated a potash solution mine in Moab, Utah for many years and has developed expertise in this safe and environmentally sound mining method.

Forrest, Bob

Response:

Comment is noted and will be considered.

Mining

Comment:

The HB Project will allow Intrepid to recover approximately 5 million tons of potash-a resource vital to American agriculture and food production-from a previously idled potash mine.

Brown, Cathryn; New Mexico State House

Response:

Comment is noted and will be considered.

Mitigation Measures

Comment:

Consistent with the DEIS, Intrepid will prepare a comprehensive mitigation plan for all potentially affected resources.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and will be considered.

Comment:

Expected salt concentrations in the evaporation ponds are toxic to wildlife. Several mitigation measures designed to exclude wildlife from the ponds are proposed on page 4-79 of the DEIS. Whichever mitigations are selected, be they design features, physical exclusion or various forms of hazing, the ponds should be intensively monitored at the initiation of operations (including at night, using infrared cameras and/or acoustic bat detectors), to allow for adaptive management should the mitigation prove unsuccessful at preventing exposure of wildlife to toxic liquids.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Recommendations for monitoring to determine the effectiveness of mitigation measures and the use of adaptive management to make changes as needed will be incorporated into the Wildlife Mitigation Measures section (Section 4.8.8 in DEIS) of the Final EIS.

Comment:

Sand dune lizard: BLM is conducting a field survey and biological assessment in order to determine how best to minimize impacts to the sand dune lizard for repair of the existing Caprock pipelines or for construction of the alternative Caprock pipeline. The sand dune lizard habitat lies east of the HB Project and construction of the wells, brine pipelines, solar ponds, HB Mill and associated facilities would not impact the sand dune lizard.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Any new information resulting from the field survey and biological assessment will be incorporated into the Final EIS.

Mitigation Measures

Comment:

In light of the preceding comments, Section 4.4.8, "Mitigation Measures," has significant deficiencies. What criteria will be used to determine how much and what methods will be used to salvage soils? Potential measures to protect stockpiles from wind and water erosion (temporary vegetation, berms), reclamation of compacted soils along access routes and BMPs to reduce any spill effects should be more thoroughly discussed.

Thomas, Charles; NM Mining and Minerals Division

Response:

All mitigation measures sections in Chapter 4 include only those measures not already required as described in Section 2.4.5 of the Draft EIS, Environmental Protection Measures Common to All Alternatives, beginning on page 2-21. As stated in Section 2.4.5, reclamation would be performed in consultation with and based on the approval of BLM, so that specific seed mixtures, soil-handling methods, and erosion controls for reclamation would be determined at that time. Compliance with site-specific erosion and sediment control plans prepared for the Construction General Permit, and adherence to BLM policies and guidelines would minimize adverse impacts to soils. A spill prevention and response plan will be developed as part of the mine plan prior to operation.

Comment:

If the new pipeline is built, we recommend that the right-of-way should not be seeded where it crosses shinnery dune habitat. At the end of the life of the mining project, all caliche should be removed from the access road, and it too should not be seeded where it passes across shinnery dune habitat. To minimize direct mortality to SDL, contractors should be instructed to follow practices described in the enclosed NMGF trenching guideline.

Wunder, Matthew; NM Dept of Game and Fish

Response:

These recommendations will be incorporated into the Final EIS.

Comment:

Section 4.5.8-Mitigation Measures (p. 4-61) indicates that recommended additional mitigation measures for project alternatives include development of a dust control plan prior to the start of construction activities. EPA encourages development of a dust control plan to govern construction activities, and any such plan should be in agreement with any applicable natural events action plans or erosion control regulations for the area.

Smith, Rhonda; USEPA Region 6

Response:

Comment is noted. That is the intent of the recommendation for a dust control plan in the referenced section.

Mitigation Measures

Comment:

As stated in the DEIS, the evaporation ponds could pose a threat to avian migratory species. Pursuant to the MBTA, EPA encourages BLM to coordinate mitigation measures to protect migratory birds in relation to the proposed evaporation ponds with the U.S. Fish and Wildlife Service and the New Mexico Department of Game and Fish.

Smith, Rhonda; USEPA Region 6

Response:

The list of potential mitigation measures included in the DEIS, Section 4.8.8, page 4-79, was developed based on communication with a representative of the USFWS (Murphy 2010). Monitoring may result in changes to the mitigation measures as effectiveness is evaluated. A formal monitoring and mitigation plan is being developed in consultation with the BLM and the FWS.

Comment:

Any demolition, construction, rehabilitation, repair, dredging or filling activities have the potential to emit air pollutants and we recommend best management practices be implemented to minimize the impact of any air pollutants. Furthermore, construction and waste disposal activities should be conducted in accordance with applicable local, state and federal statutes and regulations.

Smith, Rhonda; USEPA Region 6

Response:

As stated in the Draft EIS, page 2-21, section 2.4.5, compliance with all relevant federal and state laws, regulations, and policies would apply under all alternatives. This compliance is assumed as part of the effects analysis.

Comment:

Impacts on Caprock Wells Would Be Mitigated. Intrepid is aware that, under Alternative B, drawdown in the Caprock area may increase over the drawdown predicted under Alternatives A and C. DEIS at pages 4-43, 4-44. These impacts, if any, would be mitigated by the water conservation program and process improvements that Intrepid is planning for its East Plant. The program and improvements include upgrades to Intrepid's East Mine langbeinite processing plant that are anticipated to decrease Caprock water usage by approximately 700 to 900 gpm following the full commissioning of the changes at the East Plant. Accordingly, to the extent Caprock water is needed for the HB Project, Intrepid's Caprock water conservation efforts are expected to significantly offset any increased use for the HB Project. *Id.* at page 5-5.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Updates to the change in water usage will be considered in the Final EIS. In the Draft EIS, the possible offset of 600 to 700 gpm was considered in Chapter 5, so the change would decrease Caprock water usage by up to 200 gpm more than what was already considered.

Mitigation Measures

Comment:

If the analysis determines that significant cumulative impacts would occur, a mitigation plan for these impacts should be included in the FEIS. A mitigation plan for impacts to groundwater resources could contain water conservation improvements for the entire potash mining process, including mills, forming partnerships with area residents, farmers, and public water systems, and partnering with city and county governments and the State's water resources administrator, the New Mexico Office of the State Engineer to promulgate new or improved water conservation guidance for mining operations.

Smith, Rhonda; USEPA Region 6

Response:

The suggested mitigation measures for groundwater will be added as possible mitigation option in the FEIS. The analysis identified direct and indirect impacts that are likely to occur, and has recommended monitoring and mitigation in the Draft EIS where appropriate. These recommendations will be updated in response to comments and incorporated into the Final EIS.

Comment:

EPA encourages the use of clean, lower-emissions equipment and technologies to reduce pollution. Further, EPA's final Highway Diesel and Nonroad Diesel Rules mandate the use of lower sulfur fuels in nonroad and marine diesel engines beginning in 2007. Please include a discussion detailing measures the project will incorporate to reduce equipment emissions and the anticipated reductions in emissions.

Smith, Rhonda; USEPA Region 6

Response:

Compliance with all relevant federal and state laws, regulations, and policies would apply under all alternatives and has been assumed. No exceedances of state and federal standards and issues related to high sulfur fuels have been identified for this project. While mitigation measures can be discussed in an EIS even if impacts are not projected to be significant, in order to comply with CEQ NEPA guidance to minimize the length and complexity of EIS contents, detailed discussions of measures to solve problems not identified as of primary concern will not be added to this EIS. Intrepid submitted an application to the NMED-AQB for a Minor NSR permit for the HB Mill, which is currently under review. If the project goes forward, Intrepid will have to comply with any requirements of this permit. Recommendation for operator to use equipment that meets EPA's Highway Diesel and Nonroad Diesel Rules was added to Section 4.5.9.

Mitigation Measures

Comment:

To avoid violation of the federal Migratory Bird Treaty Act, all clearing of vegetation should take place from September 1 through March 31, thus minimizing the possibility of causing nest destruction or abandonment. To avoid entrapment of reptiles and small mammals, require contractors to follow the enclosed NMGF Trenching guideline when burying pipeline or other underground utilities.

Wunder, Matthew; NM Dept of Game and Fish

Response:

While it would be impossible to avoid all clearing of vegetation during this time period, there is a mitigation measure included in Section 4.8.8 of the Draft EIS, page 4-80, which requires avoidance of removal of large woody vegetation or coordination with BLM to identify alternative protection measures. Compliance with the MBTA is also required and assumed. If clearing occurs during the listed period, then a preconstruction survey for nesting birds will be conducted and active nesting sites avoided. A new raptor survey will also need to be conducted prior to construction.

Comment:

Floatovoltaics may be a feasible solution to the problem of waterfowl landing, resting, frequenting, and attempting to feed on the large waste water ponds which have tremendously high salt contents. These ponds with high salt concentrations are not healthy for the waterfowl that are attracted to them.

Floatovoltaics is a relatively new concept in which photovoltaic arrays (PVA's) are densely packed over water environments on pontoon platforms that float. With a sufficient density of PVA's, the underlying waste water pond would not look/appear to be so attractive from the migrating waterfowl looking for a water source. This technology could also be utilized with netting over the surface of the water. The entire system could then raise/lower depending upon the water levels in the waste water ponds.

The benefit of the floatovoltaic system would be two-fold; it would not only serve to decrease the impacts of anthropogenic development on the migrating waterfowl and other avian species, but also would serve to supply energy either locally to the mine operations, or regionally through the power grid, to either save the mining company money, or perhaps even generate income for the mining corporation. Accordingly, MMD would recommend that the floatovoltaic system should be evaluated appropriately in the DEIS.

Thomas, Charles; NM Mining and Minerals Division

Response:

The primary purpose of a Floatovoltaic® system (by Thompson Technology Industries, Inc.) is to provide a place for establishing a photovoltaic system to generate electricity and to reduce direct sunlight on the water body. Because this system would reduce evaporation by covering the water surface, it would conflict with the primary purpose of the evaporation ponds. Other mitigation measures, proposed in Section 4.8.8 on page 4-79 of the Draft EIS, that were recommended by a representative of the USFWS, would be more effective. A statement calling for monitoring the effectiveness of any mitigation measures and the use of adaptive management to make changes as needed will be incorporated into the Wildlife Mitigation Measures section (Section 4.8.8 in DEIS) of the Final EIS.

Monitoring

Comment:

Modeling conducted by the BLM in conjunction with development of the EIS indicates that water within the Rustler Formation beneath and downgradient of previous potash operations will be incorporated into the process water stream. A review of the references provided indicates additional contaminants of concern will likely be present in the process water. NMED currently requires water quality monitoring of the injection and extraction well water, as well as monitoring of water quality within the proposed evaporation pond system. Based on the information provided, NMED intends to expand the list of analytes to incorporate those additional contaminants of concern identified by BLM. NMED will share monitoring information with BLM as necessary.

Shore, Lawrence; NM Environment Department, Ground Water Quality Bureau

Response:

Comment is noted and has been considered in the EIS, which assumes compliance with the NMED permit requirements.

Comment:

The 3 monitoring wells are located south of flood pools HB North and HB Crescent and east of flood pools HB South and HB Eddy, yet Figure 3.3-7 indicates that the potentiometric flow direction of groundwater is toward the west and southwest. This means that the 3 monitoring wells are located up-gradient and cross-gradient of the flood pools; no wells downgradient of the flood pools appear proposed or present. This appears to be a major flaw in the methodology of detecting and controlling leakage from the flood pools.

Thomas, Charles; NM Mining and Minerals Division

Response:

The potentiometric flow directions shown in Figure 3.3-7 are for the Rustler Formation. The proposed monitoring wells are to monitor for potential leaks during the in-situ leaching of the mine workings, which are in the Salado Formation. The Salado is not an aquifer, and as such has no groundwater flow direction. The proposed monitoring well locations are based on the flood design elevations to monitor leakage from the flood pools.

Comment:

A subsidence monitoring plan (DRAFT HB Solar Solution Mine Project Subsidence Monitoring and Mitigation Plan) has been developed which identifies the monitoring locations, schedule, evaluation methods, and reporting procedures. *Id.* The draft plan would be reviewed and approved by BLM prior to finalizing.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

New information received in time will be incorporated into the Final EIS.

Monitoring

Comment:

Expected salt concentrations in the evaporation ponds are toxic to wildlife. Several mitigation measures designed to exclude wildlife from the ponds are proposed on page 4-79 of the DEIS. Whichever mitigations are selected, be they design features, physical exclusion or various forms of hazing, the ponds should be intensively monitored at the initiation of operations (including at night, using infrared cameras and/or acoustic bat detectors), to allow for adaptive management should the mitigation prove unsuccessful at preventing exposure of wildlife to toxic liquids.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Recommendations for monitoring to determine the effectiveness of mitigation measures and the use of adaptive management to make changes as needed will be incorporated into the Wildlife Mitigation Measures section (Section 4.8.8 in DEIS) of the Final EIS.

Comment:

Intrepid's Mine Operations and Closure Plan should be included as an appendix to the FEIS to determine its effectiveness regarding pipeline monitoring, spill response, and remedial actions.

Smith, Rhonda; USEPA Region 6

Response:

In order to comply with CEQ NEPA guidance to minimize the length and complexity of EIS contents, this plan has been incorporated by reference. As a result of this NEPA process, it is likely that some portions of the mine operations and closure plan will be modified if the project is approved. Spill response and remedial actions would comply with federal and state regulations. A spill prevention and response plan will be developed prior to construction.

Comment:

Groundwater: As part of the Underground Injection Control ("UIC") permit issued by the New Mexico Environment Department ("NMED"), Intrepid has committed to, and is required to do, extensive groundwater monitoring. The groundwater monitoring requirements address the monitoring and leak detection for the solar ponds as well as monitoring of the extraction and injection well network. Intrepid has attached the NMED UIC permit to these comments. See Exhibit 5, attached hereto. In addition, to prevent leakage, evaporation ponds would be lined with manufactured geosynthetic liners protected by an 18-inch layer of hardened salt. Evaporation pond areas will have monitoring and leak detection wells to ensure groundwater is protected.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Monitoring

Comment:

The use of only 3 groundwater monitoring wells seems insufficient to monitor potential leakage, especially considering that these monitoring wells are between one and three miles distant from the nearest flood pool.

Thomas, Charles; NM Mining and Minerals Division

Response:

The proposed monitoring well locations are based on the flood design elevations in relation to other inactive mine workings not intended to be flooded. The locations of these wells was evaluated as part of the NMED Discharge Permit DP-1681.

Comment:

Section 4.2.8.2, Page 4-15 Comment. The third bullet in this section, second line, states implementation of a plan should include a biologic inventory of cave species before groundwater pumping begins. Intrepid is extremely concerned with this requirement as the cave locations are not known by Intrepid and the area has already been subject to significant past mining and oil and gas impacts. This requirement has significant potential to delay the project. Additionally, karst and cave features may not contain water, and groundwater pumping may not affect the water level in the caves. We respectfully recommend that this requirement be removed. Intrepid has committed to working with the BLM to install groundwater monitoring wells adjacent to the critical karst areas as part of the groundwater monitoring program and Intrepid believes that monitoring of the water levels in the known cave and karst areas will provide adequate protection of biologic species that may be in the caves and karsts.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This mitigation measure is included as a recommendation that would enable BLM to monitor and apply adaptive management to minimize adverse impacts to important caves. If this mitigation measure is selected in the Record of Decision, BLM will work with Intrepid to identify the locations of the important caves in order to determine which should be surveyed and monitored. At this stage, this mitigation measure is a recommendation by the resource specialist and should be left in the EIS for consideration by the decision-maker, who can choose to modify or exclude this mitigation measure as part of the Record of Decision.

NEPA Process

Comment:

Intrepid agrees that the potash acreage chargeability issue should be clarified in BLM's decision on the project. To resolve this issue, Intrepid believes that the 96,000-acre limit in 43 C.F.R. § 3503.37(c) should be enlarged by the total acreage of all potash leases included in the HB Project Area (22,189 acres).

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and will be considered.

Comment:

Page ES-4 Comment. The second paragraph reports that two governmental entities have signed agreements to be cooperating agencies. Intrepid understands that, since the DEIS was printed, more than two government entities have signed such agreements. The entities that have signed agreements include:

The United States Department of Energy, Carlsbad Field Office;
Chaves County, New Mexico;
City of Eunice, New Mexico; and
City of Hobbs, New Mexico.

Accordingly, the statement in the DEIS should be revised.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The Final EIS will list all cooperating agencies that have formally signed an MOU, so updates will be made as appropriate.

Comment:

In addition, as a comment in general I would like to suggest that you make the supporting documentation for your DEIS available to the public via the internet on your webpage. A good example of how this is done can be found at: <http://www.gtceis.anl.gov/>

Leigh, Christi; Sandia National Laboratories

Response:

The technical reports prepared in support of this EIS were added to the Draft EIS page of the project website at <http://www.nm.blm.gov/cfo/HBIS/>.

NEPA Process

Comment:

Section 5.15, Page 5-12 Comment. In the first full paragraph, the construction schedule described was based on the construction schedule submitted by Intrepid to BLM on November 11, 2009. The EIS schedule has changed since that submittal, and the most current HB Project construction schedule should be updated in the FEIS.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Change will be made.

Comment:

Section 1.3, Pages 1-3 to 1-4. Comment. The section "Decisions to be Made" should be revised to make clear that Intrepid's leases that cover the proposed solution mining will not be "changed." Intrepid understands it is just the chargeability of the acreage that changes, as discussed in Intrepid's General Comments.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The leases will need to be adjusted and the lease conditions revised. The leases will be changed from conventional to solution mining leases and re-adjudicated so that the acreage is not include in the 96,000 acre limit. Comment is noted and will be considered.

Comment:

Intrepid's existing mining operations in the Secretary's Potash Area. Accordingly, as BLM indicates in the DEIS, Intrepid should qualify for an increase in the 96,000-acre limit in 43 C.F.R. § 3503.37 ©.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Comment:

Based on the discussion that we had regarding the documentation that supports the DEIS and the need to have an opportunity to review that information, I would like to request an extension of the public comment period for the DEIS until June 22, 2011. This should allow us to review the supporting documentation that is of interest to us and compile our comments for you.

Leigh, Christi; Sandia National Laboratories

Response:

In response to this request, BLM extended the comment period until Monday, June 23, 2011.

NEPA Process

Comment:

Personal communication with Intrepid's consultant (Richard Schowengerdt, Shaw Environmental & Infrastructure Group) indicated approximately three miles of overhead powerline would be involved. Location or alignment of the caliche pits and relocated utility corridors should be included in NEPA analysis as essential components of this project.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Analysis of the caliche pits was included as part of the surface disturbance for the project. The new and existing pits to be used are shown in Figures 2-1 and 2-3 of the Draft EIS. Page 2-11, 3rd paragraph, of the Draft EIS describes the 3 overhead power lines, 2 underground gas lines, and 1 fiber optic line that must be relocated. It also states that these would be relocated within the same section on Intrepid fee land. This was included in the impact analysis to the degree possible, but the precise locations will not be known until consultation with the utility companies has been completed. The locations of the relocated power and pipelines and the expected disturbance will be included in the final EIS

Oil and Gas

Comment:

The concerns expressed by these few oil and gas producers are also not supported by the record because both the DEIS and Intrepid's rock mechanics experts, RESPEC, show that the HB Project will not adversely affect active oil and gas wells in the HB Project area through subsidence. As explained in section I.C. of this letter, the DEIS predicts negligible subsidence from solution mining, about 0.6 feet, which would not result in abrupt changes in the ground surface.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and will be considered.

Comment:

Intrepid supports an environment where potash producers and oil and gas producers can work cooperatively and constructively to develop each resource. The HB Project is consistent with the creation of such environment, as it would not adversely affect existing oil and gas wells in the HB Project area, would not change access to potential oil and gas resources, and would not affect future oil and gas exploration and development.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted.

Comment:

Section 4.2.1.1, Page 4-1 Comment. The fifth sentence states: "Another major concern is the presence of plugged and currently operating oil and gas wellbores that penetrate the proposed potash solution mining zone." As explained in Intrepid's General Comments, there are no active oil or gas wells in the proposed flood zones for the HB Project. The fifth sentence should be revised to clarify this point.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This section is summarizing issues that were expressed during public scoping, not a statement of fact. The information in Sections 3.2 and 4.2 do not state that there are actually active oil or gas wells in the proposed flood zones. In response to comments, this will be clarified in the appropriate section of the Final EIS.

Oil and Gas

Comment:

A small number of oil and gas producers have also raised concerns that the HB Project may restrict access to oil and gas resources. DEIS at page 4-2. This concern is not supported by the record, as shown explicitly in the DEIS. There, addressing access issues directly, BLM reports under the Proposed Action "[t]here would be no change to access to oil and gas exploration and development in the project area," *id* at page 4-13, and "no change in access to potential oil and gas resources." *Id* at page 4-16. A principal reason for this conclusion is that there would be no change in BLM's oil and gas management practices in the region regardless of whether the no action alternative, the Proposed Action, or any of the other alternatives in the DEIS were selected. *Id* at page 4-13. As BLM explains, "[t]he proposed project would not restrict oil and gas further than existing restrictions and would not prevent oil and gas exploration and production in the [Oil Potash Leasing Area.]" *Id* at page ES-17.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This is correct and is supported by statements and conclusions in the Draft EIS.

Comment:

Inactive wells: In addition, as part of this project, Intrepid has committed to reentering and properly plugging and abandoning all six of the inactive wells within the flood zones. There are no active wells within the flood zones.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This will be added as a mitigation measure in the Final EIS.

Comment:

During the scoping process, a small number of oil and gas producers proposed alternatives to the Proposed Action which would require BLM to prioritize oil and gas development over potash solution mining in the HB Project area. One such alternative would authorize drilling the areas that are proposed to be solution mined prior to such mining operations. A second alternative would allow for maximum ultimate recovery of the oil and gas resources underlying the lands that immediately surround the proposed mining area. BLM correctly determined it had no obligation to study these alternatives in the DEIS.

None of these alternatives is consistent with the purpose and need of the HB Project, which is to provide for technically viable development of the potash resources, as required by federal law and federal leases. See DEIS at page 1-3. Since these alternatives do not accomplish the purpose of the HB Project and are outside the HB Project's scope, they are not reasonable and need not be studied in the DEIS. In addition, as discussed in the DEIS, the proposed alternatives do not meet the purpose and need of complying with the 1986 Order. *Id.* at page 2-5. This purpose and need is not met because giving priority to fluid minerals over potash mining would not be in compliance with the 1986 Order or BLM policy. *Id.*

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Oil and Gas

Comment:

The HB Project also will not impact the oil and gas industry's access to potential oil and gas resources, as the HB Project does not change how oil and gas development in the region would be managed by BLM.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This is stated as a conclusion in the Draft EIS in several places. See Table 2-11 for the summary of impacts.

Comment:

Page ES-16. Comment. The final paragraph on this page states "The area encompassed by existing mine workings is large enough to preclude directional drilling as a recovery method except for a small fraction of the area." If this statement means that directional drilling would not be a suitable recovery method except for a small fraction of the area beneath the HB Mines, Intrepid believes it is not consistent with current drilling technology and should be revised. See Report from Michael P. Cleary (attached hereto as Exhibit 4).

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Notwithstanding that it may be technically feasible to access oil and gas under or even over the potash, Mr. Cleary did not provide an analysis of economic constraints of trying to develop reservoirs of different oil and gas plays with varying resource potential. Qualitatively, it would be reasonable to assume that economic constraints would limit the recovery of oil and gas resources in spite of technological advances. It may not be possible estimate how much resource would be lost or recovery delayed until the end of potash mining. The statement in this section will be revised to reflect the above information.

Comment:

The recently prepared RESPEC Subsidence Report (Exhibit 2 hereto) shows that the HB Project will not impact oil and gas wells in the HB Project area. RESPEC made incremental and total tilt and strain calculations for nine active oil and gas wells located within the HB Mines subsidence zones (both from conventional mining and solution mining). RESPEC Subsidence Report at pages iii, 32, 35. All of the incremental solution-mining-induced movements (tilts and strains) from the surface to the mine openings they penetrate, or are adjacent to, are significantly less than that required to affect the structural integrity of the existing wells. *Id.* Moreover, the total (existing conventional underground mining combined with the proposed solution mining) induced movements (tilts and strains) from the surface to the mine openings they penetrate, or are adjacent to, are significantly less than that required to affect the structural integrity of the existing wells. *Id.*

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The text will be amended to provide the conclusions of the RESPEC report and the low risk of damage to wells and structures by solution mining predicted by the study. It will also be noted that predictions of overall subsidence and subsidence induced by solution mining were comparable to subsidence predictions that were previously presented by HB.

Oil and Gas

Comment:

Intrepid's review of property records and its on-the-ground surveillance show there are no active oil or gas wells in the proposed flood zones for the HB Project. Because no such wells exist, the HB Project's flood zones will not interfere with ongoing oil or gas production. The DEIS should be corrected to the extent it suggests otherwise. For example, page 4-11 of the DEIS states: "Active and abandoned oil wells and a salt water disposal well extend through the inactive mine workings targeted for solution mining (see Figure 3.2-8)." Intrepid respectfully requests this statement be revised to make clear that no active oil or gas wells exist in the HB Project's proposed flood zones. Further, Intrepid believes that the reference to Figure 3.2-8 should be replaced with a reference to Figure 3.2-7. Figure 3.2-7 should also be revised to make clear that no active oil or gas wells exist within the HB Project's proposed flood zones.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Change to figure number will be made. The map is correct as are the statements that the wells extend into the targeted workings. A statement will be added in this section of Chapter 4 to state that no active wells are located within the proposed flood zone. Because fluids from wells can enter the salt section or the mine workings, this statement is correct and will not be changed. The salt section and the inactive workings extend beyond the flood pool.

Project Description

Comment:

Section 2.4.2.2, Pages 2-11 to 2-12 Comment. The last sentence on page 2-11 and continuing sentence on page 2-12 states the injectate / ion exchange sodium and potassium can only penetrate 18 inches into the pillars and walls. Intrepid believes that dissolution can occur as long as potassium is exposed to brine. Intrepid therefore respectfully suggests that the reference to "18 inches" should be deleted and the sentence should be revised to make clear that the ion exchange "will occur as long as an interconnected pathway of potassium exists." Thus, dissolution is not limited to a specific distance.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Change will be made.

Project Support

Comment:

I am in complete support of this project. I can see NO negative impacts to the area and feel that it is a great project.

Sepich, Dave

Response:

Comment is noted.

Reclamation

Comment:

The DEIS does not adequately address any reclamation issues associated with the post-mine operations and returning the site to pre-disturbance conditions. Due to the sensitive nature of the some of the biological species in the region, it is recommended that the local site soils be graded and stockpiled for reclamation purposes. This native site soil stockpile should be planted with a wheatgrass, or some other nitrogen fixing variety of vegetation suited for the geographic/physiographic/climatic attributes of the region, to minimize wind and water erosion, and also to preserve the integrity of native/local mycorrhizae as a valuable component of a living soil. This stockpiled soil would then be utilized at the end of the mining operation to reclaim the disturbed area and be used as a base to re-establish native vegetation of the region. This re-establishment of native vegetation should be conducted carefully to mimic, as closely as possible, the existing pre-disturbance vegetation scheme in the area. Any native site soils stockpiled for the purposes of reclamation should be protected from any salt/alkaline encroachment that may occur during the period of mining operations.

Thomas, Charles; NM Mining and Minerals Division

Response:

As stated in Section 2.4.5 of the Draft EIS, Intrepid has committed to following BLM guidance for reclamation, with a goal of returning the property to beneficial post-mining land uses similar to pre-project conditions (page 2-24 of the DEIS). The introduction to Table 2-9 states that BLM policy and guidelines for environmental protection would be applied as needed, depending on site-specific conditions to be determined by BLM resource specialists. See Table 2-9 for a summary of the BLM environmental requirements and Appendix B for more details. Because it is important that the reclamation measures be site-specific, the details should be determined shortly before reclamation is to begin and should be tailored to site conditions, precluding detailed discussions in the EIS.

Comment:

Restoration: Salt tailing piles and disposal areas will not be created and wells, roads, ponds and the flotation plant would be reclaimed at the completion of construction.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Reclamation

Comment:

There is no discussion, in the draft EIS of plant species to be used at final reclamation, or interim stabilization of areas of the site. A seed mixture will need to be eventually approved for the reclamation of this project. It is important the right species are identified to ensure successful cover, adequate habitat, and stabilization of the site. The proponent should provide a list of potential reclamation species, seeding rates, amendments, and criteria to be used for measuring success.

Thomas, Charles; NM Mining and Minerals Division

Response:

As stated in Section 2.4.5 of the Draft EIS, Intrepid has committed to following BLM guidance for reclamation, with a goal of returning the property to beneficial post-mining land uses similar to pre-project conditions (page 2-24 of the DEIS). The introduction to Table 2-9 states that BLM policy and guidelines for environmental protection would be applied as needed, depending on site-specific conditions to be determined by BLM resource specialists. See Table 2-9 for a summary of the BLM environmental requirements and Appendix B for more details. Because it is important that the reclamation measures be site-specific, the details should be determined shortly before reclamation is to begin and should be tailored to site conditions, precluding detailed discussions in the EIS. The BLM approved seeding mixtures and requirements for different soil types will be added to Appendix B

Riparian Areas/Wetlands

Comment:

There are two locations where pipeline alignments are proposed within 200 meters of a floodplain, contrary to standard BLM permitting conditions. Both locations are intermittent waterbodies with woody riparian vegetation (Clayton Lake and Hackberry Lake). While it may be necessary to grant an exception to the 200 meter buffer, we recommend these pipelines be moved as far as feasible from the waterbodies, at least to the other side of the road. In addition, earthen berms, trenches or other best management practices should be specified to direct any spilled brine away from entering the drainage bottom.

Wunder, Matthew; NM Dept of Game and Fish

Response:

There are two locations where the pipelines will pass within 200 meters of a floodplain. The first location is in T20S R30E section 9 on the opposite side of route 360 from the tailings pile. Although fed by precipitation, the intermittent lake and flood zone are highly saline due to runoff from the tailing pile. There is little woody vegetation at the site. The pipeline runs on the opposite side of the road from the lake and due to the tailings pile, there is no other possible route. The second location is in T20S R30E section 3 and T19S R30E section 34 along county road 222 next to Clayton Lake. The BLM is recommending burying the pipeline to allow for surface flow of water in this location. Clayton lake is highly saline and is undesirable for wildlife. The woody vegetation around the lake consists mostly of unwanted and invasive salt cedar which the BLM has been in the process of eliminating. In fact, the BLM believes that the drawdown of the Rustler Aquifer is likely to drain this surface feature and considers this a positive impact. The highly saline nature of the water body makes pollution from pipeline leaks a non-issue. There is little benefit to moving the pipeline to the other side of the road as it would still be in an area prone to flooding and would conflict with an OHV trail that runs along that side of the road. The pipeline routes do not approach Hackberry Lake.

Socioeconomics

Comment:

Intrepid has commissioned a separate economic impact analysis that supports the analysis in the DEIS. The economic analysis was prepared by the Office of Policy Analysis, Arrowhead Center, New Mexico State University, titled "The Economic Impacts of Intrepid Potash, Inc.'s Proposed HB Solar Solution Mine Project in Eddy County, New Mexico" (2011) ("Arrowhead Center Report") (attached hereto as Exhibit 1). The HB Project's total construction costs are estimated to be between \$120 million to \$130 million, as reflected in the Arrowhead Center Report. Arrowhead Center Report at pages 1, 29. Total construction impacts are estimated to include between 262 and 284 direct construction jobs, between 491 and 531 total jobs, and between \$24.0 million (or \$48,791 per job) and \$26.0 million (or \$48,887 per job) of labor income. *Id.* at pages 2, 29-32. In a typical production year, the direct employment impacts range from 29 to 36 direct jobs and total employment impacts range from 51 to 62 jobs. *Id.* at pages 3, 33, 35-38. Direct taxes and royalties during the life of the project range from \$83.7 million to \$167.4 million. *Id.* at pages 3, 43. Other taxes result from the spending of employees. These other taxes range from \$8.1 million to \$9.8 million over the life of the project. *Id.* at pages 4, 47. Intrepid urges BLM to consider these impacts in its review of the HB Project. Intrepid notes that these economic benefits are not in lieu of other economic benefits, such as economic benefits from oil and gas. As described in greater detail below, the HB Project does not alter the ability of oil and gas lessees to access the potential oil and gas resources beneath the HB Project area.

Given Intrepid's strong interest in the HB Project, and the significant benefits that will accrue to the public, the economy, and the region if the HB Project is approved, Intrepid respectfully requests that BLM review these comments and attachments, and incorporate them into the EIS and the administrative record for the proceeding. Intrepid may supplement these comments as it obtains additional information through the EIS process.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted. No revisions are necessary because the employment and labor income effects cited in the comment are comparable to those contained in the Draft EIS. The economic impact report cited in the comment, by being submitted as an exhibit to the comment, automatically becomes part of the administrative record for this EIS.

Comment:

Other taxes result from the spending of employees. These other taxes range from \$8.1 million to \$9.8 million over the life of the project. *Id.* at pages 4,47.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Text will be revised in Sections 4.15.5.4, 4.15.6.4, and 4.15.7.4 to acknowledge other tax receipts.

Socioeconomics

Comment:

The HB Project would create substantial economic benefits for the region. With an expected 12 -18 month construction period and 28-year mine life, the project would generate more than \$90 million in federal and state royalties, an estimated \$120 to \$130 million in capital construction expenditures and more than 150 local construction phase jobs and 30 to 40 long-term jobs.

Huett, Philip

Response:

Comment is noted.

Comment:

The HB Project's total construction costs are estimated to be between \$120 million to \$130 million, as reflected in the Arrowhead Center Report. Arrowhead Center Report at pages 1,29.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Text will be added to the description of the Proposed Action in Section 2.4.2 to describe Intrepid's total additional investment and annual production costs. A reference to this new report will be added.

Comment:

Potash mining has been one of the mainstays of the southeastern New Mexico economy for more than 50 years. I am a strong supporter of projects, such as the HB Project, that grow our local economy and create jobs while preserving our environment.

Heaton, John; New Mexico House of Representatives

Response:

Comment is noted and has been considered in the EIS.

Soils

Comment:

Soil mapping was probably conducted at an Order 3 level of detail. Areas directly impacted should be mapped at least at an Order 2 level to delineate inclusions that might require additional protection. Since any pipeline construction and maintenance will involve varying degrees of compaction, perhaps at depth in finer textured materials or as a result of travel of heavy vehicles on moist soils, some sampling effort should include a reconnaissance of pre-construction bulk density per soil series, to at least several feet in depth to estimate a required depth of ripping during reclamation.

Thomas, Charles; NM Mining and Minerals Division

Response:

Comment is noted. Soils were not identified as an issue for this project and a significant percentage of the project area has already been disturbed. Given these facts the BLM does not believe that this level of detailed soil analysis is warranted. BLM policy and guidelines for environmental protection would be applied as needed, depending on site-specific conditions to be determined by BLM resource specialists. Because it is important that the reclamation measures be site-specific, the details should be tailored to site conditions based on onsite evaluations conducted just prior to implementation, precluding detailed discussions in the EIS.

Comment:

The DEIS does not adequately address any reclamation issues associated with the post-mine operations and returning the site to pre-disturbance conditions. Due to the sensitive nature of some of the biological species in the region, it is recommended that the local site soils be graded and stockpiled for reclamation purposes. This native site soil stockpile should be planted with a wheatgrass, or some other nitrogen fixing variety of vegetation suited for the geographic/physiographic/climatic attributes of the region, to minimize wind and water erosion, and also to preserve the integrity of native/local mycorrhizae as a valuable component of a living soil. This stockpiled soil would then be utilized at the end of the mining operation to reclaim the disturbed area and be used as a base to re-establish native vegetation of the region. This re-establishment of native vegetation should be conducted carefully to mimic, as closely as possible, the existing pre-disturbance vegetation scheme in the area. Any native site soils stockpiled for the purposes of reclamation should be protected from any salt/alkaline encroachment that may occur during the period of mining operations.

Thomas, Charles; NM Mining and Minerals Division

Response:

As stated in Section 2.4.5 of the Draft EIS, Intrepid has committed to following BLM guidance for reclamation, with a goal of returning the property to beneficial post-mining land uses similar to pre-project conditions (page 2-24 of the DEIS). The introduction to Table 2-9 states that BLM policy and guidelines for environmental protection would be applied as needed, depending on site-specific conditions to be determined by BLM resource specialists. See Table 2-9 for a summary of the BLM environmental requirements and Appendix B for more details. Because it is important that the reclamation measures be site-specific, the details should be determined shortly before reclamation is to begin and should be tailored to site conditions, precluding detailed discussions in the EIS.

Soils

Comment:

Section 4.4 of the DEIS provides discussion about impacts to soil resources that include wind and water erosion, surface and sub-surface compaction and mixing of soil horizons during construction, all of which seem appropriate. However, one important omission from the discussion (except in passing, in Section 3.4) is the potential impact to local soil resources and reclamation in the event of a spill. Potential soil degradation following a large brine spill might include sealing/crusting of fine-textured soils with high Na content brines and the negative impact of salinity on growth media properties.

Thomas, Charles; NM Mining and Minerals Division

Response:

While it is true that high sodium content and saline conditions can alter soil permeability, should the project be approved, Intrepid will develop and comply with a project-specific spill prevention plan and an emergency response plan to minimize or avoid environmental damage. See Section 4.14 of the Draft EIS. Leak detection systems and regular monitoring of pipelines, as described in Chapter 2, are intended to identify leaks before they damage the environment. Intrepid will be responsible for any cleanup and remediation of spills or leaks.

Comment:

While no Prime Farmland was found in the survey conducted, some soil series are relatively productive in semi-arid areas (Berino, Pajarito, Regan) and some areas of ecological importance or where impacts would be less readily remedied (brine spills) might require rerouting/relocating facilities.

Thomas, Charles; NM Mining and Minerals Division

Response:

Comment is noted and will be considered. Should the project be approved, Intrepid would develop and comply with a project-specific spill prevention plan and an emergency response plan so that damage to all soils would be minimal. See Section 4.14 of the Draft EIS. Leak detection systems and regular monitoring of pipelines, as described in Chapter 2, are intended to identify leaks before they damage the environment. No agriculture currently exists in the project area.

Subsidence

Comment:

Section 4.2.2.1, Page 4-2 Comment. The attached report (Exhibit 2) by RESPEC Consulting & Services titled "Evaluation of Ground Subsidence Over the Intrepid HB Mines, Carlsbad, New Mexico," Topical Report RSI-2164 (April 2011), bears directly on subsidence issues. It should be included in the information that BLM lists in this section in the FEIS.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Reference to this report will be added.

Comment:

The recently prepared RESPEC Subsidence Report (Exhibit 2 hereto) shows that the HB Project will not impact oil and gas wells in the HB Project area. RESPEC made incremental and total tilt and strain calculations for nine active oil and gas wells located within the HB Mines subsidence zones (both from conventional mining and solution mining). RESPEC Subsidence Report at pages iii, 32, 35. All of the incremental solution-mining-induced movements (tilts and strains) from the surface to the mine openings they penetrate, or are adjacent to, are significantly less than that required to affect the structural integrity of the existing wells. *Id.* Moreover, the total (existing conventional underground mining combined with the proposed solution mining) induced movements (tilts and strains) from the surface to the mine openings they penetrate, or are adjacent to, are significantly less than that required to affect the structural integrity of the existing wells. *Id.*

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The text will be amended to provide the conclusions of the RESPEC report and the low risk of damage to wells and structures by solution mining predicted by the study. It will also be noted that predictions of overall subsidence and subsidence induced by solution mining were comparable to subsidence predictions that were previously presented by HB.

Comment:

The DEIS identifies negligible subsidence impacts from the HB Project...The DEIS's analysis of subsidence is supported by Intrepid's rock mechanics experts, RESPEC Consulting & Services ("RESPEC"), who recently completed an ultimate subsidence analysis for the HB Project titled "Evaluation of Ground Subsidence Over the Intrepid HB Mines, Carlsbad, New Mexico," Topical Report RSI-2164 (April 2011) ("RESPEC Subsidence Report") (attached hereto as Exhibit 2).

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Subsidence

Comment:

Section 4.2.4.2, Page 4-6 Comment. The first sentence states that caves and caves resources would not be affected under the No Action Alternative. Intrepid respectfully submits that conventional mining in the area has already caused subsidence and that subsidence has potential to have impacted the caves and cave resources in the area.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Past conventional mining and subsidence contributed to the current conditions described in Chapter 3. The impacts discussed under the No Action Alternative are those that would occur in the future under current mining operations and maintenance activities, without implementation of the proposed project.

Comment:

A subsidence monitoring plan (DRAFT HB Solar Solution Mine Project Subsidence Monitoring and Mitigation Plan) has been developed which identifies the monitoring locations, schedule, evaluation methods, and reporting procedures. *Id.* The draft plan would be reviewed and approved by BLM prior to finalizing.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

New information received in time will be incorporated into the Final EIS.

Comment:

Section 4.2.9.1, Page 4-15 Comment. Intrepid respectfully recommends that the discussion in this section should include a citation to RESPEC Consulting & Services, "Evaluation of Ground Subsidence Over the Intrepid HB Mines, Carlsbad, New Mexico," Topical Report RSI-2164 (April 2011).

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The text in Section 4.2 will be amended to provide the conclusions of the RESPEC report. However, the referenced section (4.2.9.1) is a summary of the impacts discussed earlier in this chapter and does not need to repeat all references cited, just the primary conclusions. The conclusions of the RESPEC report are similar to the other reports cited to support the analysis in the EIS, so no new information has been provided.

Subsidence

Comment:

Section 4.2.3, Page 4-4 Comment. The second bullet indicates that the risk from "anthropogenic-induced subsidence" is not predictable. That statement appears to be inconsistent with the third bullet, which reports that the subsidence effects from potash mining are "predictable." Intrepid respectfully recommends clarifying the statement to say that naturally induced subsidence manifestations may not be predictable.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The text will be revised in this section as requested.

Threatened & Endangered Species

Comment:

Section 6.2, Page 6-1 Comment. Intrepid recommends that BLM revise the first full paragraph to reflect two points. First, although the sand dune lizard has yet to be listed as threatened under the Endangered Species Act, BLM is currently consulting with the Fish and Wildlife Service in anticipation of such potential listing. Second, as reflected earlier in this letter, Intrepid is currently working with BLM on a Biological Assessment for the sand dune lizard.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Consultation information will be updated to reflect activities that occurred after publication of the Draft EIS.

Comment:

Lesser Prairie Chicken: There is no lesser prairie chicken habitat within the HB Project construction area for the wells, brine pipelines, solar ponds, HB Mill and associated facilities. Intrepid would abide by the BLM restrictions described in Section 4.8.6.3 of the DEIS for working in lesser prairie chicken habitat for repair of the existing Caprock pipelines or for construction of the alternative Caprock pipeline.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Comment:

NMGF recommends that heavy equipment operation be prohibited from 3:00 am to 9:00 am, between February 15 and June 30, within 1.5 miles of lek sites active within the past five years. There are a number of known leks within this distance of the existing pipelines, therefore the seasonal timing restriction would apply.

Wunder, Matthew; NM Dept of Game and Fish

Response:

This timing limitation is listed in Table 2-9 and Appendix B, Section 2.11.2.1.1, as a BLM requirement and compliance has been assumed in the EIS.

Comment:

Sand dune lizard: BLM is conducting a field survey and biological assessment in order to determine how best to minimize impacts to the sand dune lizard for repair of the existing Caprock pipelines or for construction of the alternative Caprock pipeline. The sand dune lizard habitat lies east of the HB Project and construction of the wells, brine pipelines, solar ponds, HB Mill and associated facilities would not impact the sand dune lizard.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The findings of the field survey and biological assessment will be presented in the Final EIS.

Threatened & Endangered Species

Comment:

The DEIS incorrectly states (page 4-79) that the right-of-way for the proposed new pipeline does not cross occupied sand dune lizard habitat. There are several documented occurrences of the species along that stretch within a mile of the highway, including one within a half mile that was verified since 2005. Since the highway already comprises a significant barrier, the new pipeline corridor may have less habitat fragmentation effect than excavation of the existing lines, but it is likely that construction of the pipeline and access road would impact this species through both direct mortality and additional loss of habitat. Consultation with the Fish & Wildlife Service would be required if that agency does list the species. If the new pipeline is built, we recommend that the right-of-way should not be seeded where it crosses shinnery dune habitat. At the end of the life of the mining project, all caliche should be removed from the access road, and it too should not be seeded where it passes across shinnery dune habitat. To minimize direct mortality to SDL, contractors should be instructed to follow practices described in the enclosed NMGF trenching guideline.

Wunder, Matthew; NM Dept of Game and Fish

Response:

At the time of the writing of the Draft EIS, no sand dune lizard occupied habitat was known within the new pipeline ROW although it does fall within the boundaries of the overall habitat. However, the route of the proposed new pipeline has been slightly modified since the Draft EIS and BLM is conducting a field survey of the full ROW. A biological assessment of the effects of the preferred alternative will be part of formal consultation with the USFWS. The findings of the field survey and biological assessment will be presented in the Final EIS. Reference to the recommended mitigation measures will be included in the Final EIS.

Comment:

Section 3.8.2, Page 3-83 Comment. In the section titled "Sensitive Species," second paragraph, second line, Intrepid respectfully recommends deleting "would not adversely affect," and substituting the words "is not likely to jeopardize the continued existence of." With this change, the DEIS more accurately tracks the language of section 7(a)(2) of the Endangered Species Act, 16 U.S.C. § 1536(a)(2).

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Either one is correct. The referenced paragraph is just explaining BLM's responsibility and not intended to directly quote the extensive language of the ESA.

Comment:

The project footprint, and a 1.5-mile buffer zone, should be surveyed for lek activity, using NMGF survey protocols (available on request).

Wunder, Matthew; NM Dept of Game and Fish

Response:

The known lek locations and buffer zones are displayed on Figure 3.8-1 in relation to project boundaries and pipelines. This reflects prior surveys.

Threatened & Endangered Species

Comment:

We are concerned about potential effects on two of these species, particularly if Alternative B is selected: the lesser prairie-chicken (LPC), a federal candidate for listing and state species of concern; and the sand dune lizard (SDL), a state Endangered species currently proposed for federal listing.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Consultation with the USFWS on the SDL is underway, with a field survey of the proposed new pipeline ROW and development of a biological assessment. Compliance with timing restrictions for LPC would be required by BLM, as stated in Section 2.4.5 of the Draft EIS.

Comment:

The right-of-way, and a buffer zone, should be re-surveyed. However this alignment closely parallels state highway 62/180, therefore seasonal disturbance restrictions may not be appropriate or necessary.

Wunder, Matthew; NM Dept of Game and Fish

Response:

The route of the proposed new pipeline has been slightly modified since the Draft EIS and BLM is conducting a field survey of the full ROW. A biological assessment of the effects of the preferred alternative will be part of formal consultation with the USFWS. The findings of the field survey and biological assessment will be presented in the Final EIS.

Vegetation/Botany

Comment:

Because of the reduced drawdown [Alternative B], there may also be fewer impacts to vegetation types most affected by groundwater drawdown in the HB Project area. *Id.* At pages 2-36,4-73. For example, Alternatives A and C, if implemented, could potentially impact the following vegetation: mesquite upland scrub (5,932-6,044 acres), desert scrub (2,561-2,622 acres), grassland (836-840 acres) and woody riparian (639-655 acres). *Id.* at page 2-36. In contrast, Alternative B could potentially impact the following much smaller amounts of vegetation: mesquite upland scrub (1,332-3,282 acres), desert scrub (483-1,579 acres), grassland (425-738 acres) and woody riparian (6-56 acres). *Id.* Thus, the greatest potential impacts to vegetation communities as a result of groundwater drawdown could occur under Alternatives A and C. *Id.* at page 4-73.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

Comment is noted and has been considered in the EIS.

Comment:

Groundwater drawdown would also adversely affect 836 to 840 acres of woody riparian vegetation under the Proposed Action or Alternative C, or 6-56 acres under Alternative B. Woody riparian vegetation is disproportionately important to wildlife, particularly breeding birds, in arid and semi-arid areas. Significant loss of this habitat type could be compensated by habitat improvement projects elsewhere on the project area.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Comment is noted and will be considered. Much of the woody vegetation around Clayton lake consists of unwanted Tamarisk; An invasive species that the BLM is trying to eradicate.

Vegetation/Botany

Comment:

The DEIS does not adequately address any reclamation issues associated with the post-mine operations and returning the site to pre-disturbance conditions. Due to the sensitive nature of the some of the biological species in the region, it is recommended that the local site soils be graded and stockpiled for reclamation purposes. This native site soil stockpile should be planted with a wheatgrass, or some other nitrogen fixing variety of vegetation suited for the geographic/physiographic/climatic attributes of the region, to minimize wind and water erosion, and also to preserve the integrity of native/local mycorrhizae as a valuable component of a living soil. This stockpiled soil would then be utilized at the end of the mining operation to reclaim the disturbed area and be used as a base to re-establish native vegetation of the region. This re-establishment of native vegetation should be conducted carefully to mimic, as closely as possible, the existing pre-disturbance vegetation scheme in the area. Any native site soils stockpiled for the purposes of reclamation should be protected from any salt/alkaline encroachment that may occur during the period of mining operations.

Thomas, Charles; NM Mining and Minerals Division

Response:

As stated in Section 2.4.5 of the Draft EIS, Intrepid has committed to following BLM guidance for reclamation, with a goal of returning the property to beneficial post-mining land uses similar to pre-project conditions (page 2-24 of the DEIS). The introduction to Table 2-9 states that BLM policy and guidelines for environmental protection would be applied as needed, depending on site-specific conditions to be determined by BLM resource specialists. See Table 2-9 for a summary of the BLM environmental requirements and Appendix B for more details. Because it is important that the reclamation measures be site-specific, the details should be determined shortly before reclamation is to begin and should be tailored to site conditions, precluding detailed discussions in the EIS.

Comment:

In Section 3.7.2. of the DEIS under gypsum wild buckwheat it states that, "Fifteen populations are known to occur in three locations in Eddy County, New Mexico". This statement is inaccurate and not in the NatureServe treatment of this endangered plant. Our review indicates that there are only three populations of gypsum wild buckwheat at three locations.

Thomas, Charles; NM Mining and Minerals Division

Response:

Due to the varying reports of population numbers from NatureServe, the text has been modified to only mention the three known locations of gypsum wild buckwheat that occur in Eddy County, New Mexico.

Vegetation/Botany

Comment:

If gypsum wild buckwheat is included a potential sensitive plant species for the project area, then Tharp's Bluestar should also be included in the DEIS. Both species occur near each other on gypsum substrates in the Black River region, which are their closest populations to the project area.

Thomas, Charles; NM Mining and Minerals Division

Response:

Based on the known locations and limited distribution of the Tharp's Bluestar, as identified by the NM Rare Plant Technical Council, it is considered unlikely the species would be found in the Project Area. The nearest location of the gypsum wild buckwheat, as identified in the data provided by the BLM, is located east of the Project Area, where there is no known occurrence of the Tharp's Bluestar.

Water Resources

Comment:

Modeling conducted by the BLM in conjunction with development of the EIS indicates that water within the Rustler Formation beneath and downgradient of previous potash operations will be incorporated into the process water stream. A review of the references provided indicates additional contaminants of concern will likely be present in the process water. NMED currently requires water quality monitoring of the injection and extraction well water, as well as monitoring of water quality within the proposed evaporation pond system. Based on the information provided, NMED intends to expand the list of analytes to incorporate those additional contaminants of concern identified by BLM. NMED will share monitoring information with BLM as necessary.

Shore, Lawrence; NM Environment Department, Ground Water Quality Bureau

Response:

Compliance with the discharge permit (DP-1681) issued by NMED-GWQB would be required.

Comment:

Section 4.3.5.2, Pages 4-25, 4-28 Comment. Intrepid respectfully suggests that the word "significantly" be removed from the statement ... "reduced groundwater flows from Nash Draw caused by project pumping may significantly reduce flow to the Pecos River" . . . The possible reduced flows from Nash Draw into the Pecos River arising under Alternative A would be negligible when compared to stream flow in the river. Stream flows in the Pecos River near Malaga are typically more than 50 cubic feet per second or more than 35,000 acre-feet per year. The average annual flow over the past 25 years is more than 75,000 acre-feet per year. In contrast, the projected reduction in groundwater discharge to Nash Draw under Alternative A is 78 gpm using the Rustler Preferred Model and is 106 gpm using the Rustler Enhanced Model. A reduction of 100 gpm is equivalent to 0.22 cubic feet per second or 160 acre-feet per year. A reduction of this magnitude is much less than 1 % of the typical river flows or the average annual river flow over the past 25 years. Given that the DEIS defines a significant impact to the Pecos River as a decrease of 1 % of the Current average annual river flows (section 4.3.3, page 4-21), the projected reduction in river flow under Alternatives A or B would be insignificant, should it even occur. The potential reduction in discharge to the Pecos River is based on conservative projections from the groundwater modeling effort, and does not account for the geologic / structural features where the Magenta outcrops in Nash Draw. Further, any discharges from the Magenta are likely lost to evaporation / infiltration rather than flowing into the Pecos River. Again, Intrepid support this analysis of apparent worst-case conditions in the DEIS.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

The Draft EIS defines a significant impact as a decrease in flow contribution to the Pecos River by more than 1 percent. The assumption does refer to current average annual flows, but the key point is that the reduction in contribution from the project area would be reduced by more than 1% compared to current contributions. This will be clarified in the Final EIS. The fact remains that modeled groundwater contributions to springs and seeps in the calibrated model would have a reduction of 64 percent and groundwater flow to Nash Draw would have a reduction of 35 percent under Alternative A. Both of these reductions in flow contributions would be significant if they occur. Using the term "may" as in "may significantly reduce flow to the Pecos" accounts for the unknowns, such as how much of this actually reaches the Pecos River due to infiltration and evaporation, as suggested in the comment.

Water Resources

Comment:

In arid environments like southeastern New Mexico (SENM), effective water management is crucial. Fresh water from surface and underground sources is at a premium and should be used prudently.

Romero, Van; New Mexico Tech

Response:

Comment is noted.

Comment:

The proposed drawdown of water in the Rustler Formation could upset the balance between the two systems and create a siphoning effect on the perched water table in the caves. Lowering or possibly totally draining the perched water table could have very serious effects on the cave systems and species dependant upon the water in the caves.

Harrington, Ken

Response:

A decline in water levels in the Rustler has the potential to affect solution cavities, and thus caves. Because most of the "naturally formed" caves and solution cavities were developed over millions of years as the climate changed in the project area and water levels declined in the Rustler, it is not anticipated that a decline in water levels in the Rustler due to the proposed action will develop new caves. Such a groundwater decline may increase the size of existing caves due to increased dissolution by precipitation that infiltrates. The introduction of water of a different chemistry results in the solution. There is a possibility that a decline in groundwater levels may affect some caves, but the overall impact is expected to be very localized. The proposed groundwater monitoring and mitigation in response to changes that may affect caves would minimize the potential for damage to cave water.

Comment:

It is difficult to determine the potential of water contamination based on information provided in the DEIS. The chance that backfill injection will contribute to groundwater contamination is highly dependent on site conditions, including mine mineralogy, site hydrogeology, backfill characteristics, and injection practices. Please provide additional information on the potential for groundwater contamination and mitigation efforts if contamination were to happen.

Smith, Rhonda; USEPA Region 6

Response:

The proposed wells to inject pregnant brine into the flood pools are not backfill injection wells that are often used to fill underground mines. Backfill injection wells usually contain a mixture of water, sand, mill tailings, or other materials that may contaminate aquifers through leaching or in fractures. For this project, the wells into the flood pools would only be injecting saline brine into the existing salt layer from which potash has been extracted. Without injecting contaminated material into the mine workings that are not located in an aquifer, the likelihood of groundwater contamination is low and therefore has not been discussed in the EIS. Compliance with the discharge permit (DP-1681) issued by NMED-GWQB would serve to minimize groundwater contamination. It should be noted that the flood pools lie below the existing potable aquifers, so leakage from the flood pools is unlikely to impact them. The injection and extraction wells will be built to class V standards with multiple casing to prevent possible contamination of the groundwater and shallow aquifers.

Water Resources

Comment:

My only comment on the Draft EIS would be that the brine from the Capitan Aquifer be considered as a potential source of water for the solution mining project as a viable alternative to brine from the Rustler Formation or fresh water from the Ogallala Aquifer. The Capitan is located adjacent to the project area and would preclude the construction cost of a pipeline to the Caprock (Ogallala Aquifer) and would preserve valuable fresh water resources for the communities of Hobbs and Lovington, New Mexico. Moreover, the Capitan Aquifer would provide the volumes of brine necessary for the solution mining project whereas the yields from the Rustler Formation may prove inadequate.

Ferguson, Daniel; Department of Energy/Carlsbad Field Office

Response:

The Capitan Aquifer lies beneath the HB In-Situ project area in T19S, R30E and T20S, R30E, mainly below the area known as Clayton Basin. The Capitan Aquifer is found within the Permian (Guadalupian) Capitan and Goat Seep limestones, as well as the forereef and backreef facies that border the main limestone reef structure. Figure 3.2-5 of the Draft EIS shows the location of the Capitan Reef and Aquifer in the project area. In the project area, the Capitan Aquifer forms an arcuate band of water-bearing limestone in northern Eddy County between the Pecos River and the Eddy County/Lea County line. The Capitan Aquifer in the project area is 10 to 14 miles wide and lies at a depth of 1,500 to 2,000 feet below ground surface. The Capitan Aquifer in the project area is about 1,500 to 2,000 feet in thickness (Hiss 1975; 1976).

Before the formation of the Pecos River, the Capitan Aquifer was an integrated flow system that was recharged in the Guadalupe Mountains and had groundwater flowing eastward and discharging near Hobbs, New Mexico. With the formation of the Pecos River in Pleistocene time, groundwater flow from the Guadalupe Mountains was intercepted by the Pecos River and thus groundwater flow east of the Pecos into the Capitan Aquifer was reduced. This area of the aquifer is upgradient of the region to the east and there is no hypothesized recharge from that direction.

There are a series of low permeability submarine canyons that bisect the reef and limit connectivity with the east and south of the aquifer. Today, the groundwater gradient in the Capitan Aquifer of northern Eddy County between the Pecos River and the Lea County line is relatively flat. The average groundwater elevation is around 3200 feet amsl. The Capitan Aquifer in this area is confined and thus artesian, but with little source of recharge and a low permeability submarine channel along the Lea County line, the groundwater flow is basically stagnant in northern Eddy County east of the Pecos River.

Aquifer tests report by Mercer (1983) and also Richey and Wells (1984) have shown that the range in hydraulic conductivity for the Capitan Aquifer in northern Eddy County east of the Pecos River is between 1-25 feet/day, with most test values falling between 2.4 and 16 feet/day. The estimated average hydraulic conductivity is 5.0 feet/day. Oil well tests reported for the Capitan by Huff (1997) show values generally in the range of 1-5 millidarcies with the highest value reported being 18 millidarcies. Test wells analyzed by Hiss yielded on average less than 50 gallons per minute (Hiss 1976).

Overall, the permeability of the Capitan Aquifer in the project area is rather low, suggesting low well yields for water supply. This contrasts with the eastern side of the aquifer where higher yields have been documented in locations such as the Jal well field. There are 30 salt water injection wells injecting into or near the Capitan Aquifer. The wells possibly inject a variety of contaminants, which could include heavy metals. The effect of these wells on the water quality in the aquifer is unknown and would need to be analyzed before the water could be used for industrial projects. The lack of information on the effects of the injection wells creates uncertainty as to the viability of the water quality for long term usage. Acquiring the information needed to evaluate the Capitan Aquifer for the HB project would be a time-consuming and very expensive undertaking. It would require selecting

Water Resources

locations, drilling multiple test wells, performing numerous pump tests, doing multiple chemical analyses, and developing a water model of the aquifer. These processes would likely take many months and would be expensive with a low probability success given the existing data. The results of such a study are uncertain and may not provide any additional information for analyzing this aquifer and any potential adverse impacts or mitigation of project impacts on the human environment.

In summary, existing data suggest that it is unlikely that the Capitan Aquifer would be suitable to supply the water to this project. Groundwater is available in the Capitan Aquifer beneath the project area, mainly below Clayton Basin. However, the permeability of the Capitan Aquifer is low in this area, the groundwater flow is stagnant due to little recharge, and the low-permeability submarine channel along the Lea County line inhibits flow from the east. Industrial wells attempting to use the Capitan Aquifer water in this area would likely be deep wells with low yields. In addition, there are uncertainties regarding water quality due to the possible introduction of contaminants from the salt water injection wells into this aquifer. Gathering the needed information to evaluate the aquifer for this project would likely take many months and cost an exorbitant amount of money. The applicant does not have water rights in the Capitan and did not propose using this aquifer to supply project water.

For these reasons, in addition to the fact that the use of this aquifer did not come up during public scoping, the Capitan Aquifer was not considered as an alternative water supply in the EIS.

References:

Hiss, W.L. 1976. Structure of the Permian Guadalupian Capitan Aquifer, southeastern New Mexico and west Texas. New Mexico Bur. Mines and Mineral Resources Resource Map 6.

Hiss, W.L. 1975. Thickness of the Permian Guadalupian Capitan Aquifer, southeastern New Mexico and west Texas. New Mexico Bur. Mines and Mineral Resources Resource Map 5.

Huff, G.E. 1997. Summary of Available Hydrogeologic Data collected between 1973 and 1995 and information on all Permeability Data and Aquifer Tests for the Capitan Aquifer, Eddy and Lea Counties, New Mexico. USGS Open File Report 87-370.

Mercer, J.W. 1983. Geohydrology of the Proposed Waste Isolation Pilot Plant, Los Medanos Area, southeastern New Mexico. USGS Open File Report 83-4016.

Richey, S.F. and J.G. Wells 1984. Geohydrology of the Delaware Basin and Vicinity, Texas and New Mexico. USGS Open File Report 84-4077.

Comment:

The use of only 3 groundwater monitoring wells seems insufficient to monitor potential leakage, especially considering that these monitoring wells are between one and three miles distant from the nearest flood pool.

Thomas, Charles; NM Mining and Minerals Division

Response:

The proposed monitoring well locations are based on the flood design elevations in relation to other inactive mine workings not intended to be flooded. The locations of these wells was evaluated as part of the NMED Discharge Permit DP-1681. The flood pools lie well below the existing potable aquifers making contamination from leakage is unlikely.

Water Resources

Comment:

I support Alternative B as presented in the Draft EIS. The use of Rustler water for the HB Project is most appropriate due to its salinity and proximity to the HB Project area. If the Rustler water wells cannot produce all of the needed water, the Draft EIS indicates that Intrepid has existing Caprock water rights and can draw from that aquifer to meet the water needs for the HB Project. I understand that Intrepid's water conservation programs at its plants and its Langbeinite Recovery Improvement Project will reduce its existing Caprock water usage. For these reasons, Alternative B, with its increased flexibility, seems the most sensible alternative for the HB Project.

Brown, Cathryn; New Mexico State House

Response:

Comment is noted and will be considered.

Comment:

One alternative to consider as part of the DEIS would be the installation of a leak detection system directly into the flood pool complex, as part of the liner system.

Thomas, Charles; NM Mining and Minerals Division

Response:

A liner cannot be installed under the flood pool because that would require equipment to enter the inactive mines and excavate in unsafe conditions. Note that the injectate would be composed of brine that would be injected into an existing salt formation of similar composition. To ensure that injectate does not enter the downstream inactive mine workings, three monitoring/extraction wells would be installed to detect leaks and extract brine that may flow out of the flood pools before it reaches active mines.

Comment:

NMT recommends that a comprehensive study of the aquifers, to provide water to Intrepid Potash, be conducted prior to any commitment being made regarding their use.

Romero, Van; New Mexico Tech

Response:

Comment is noted. The models used for impact analysis were developed using the best available data derived from the many studies of the Delaware Basin hydrogeology that have been reported over the past 40 years. If the project is approved, groundwater monitoring will add to that information and will allow for adjustments to water usage through adaptive management, if necessary. The Caprock aquifer has been analyzed by the Office of the State Engineer as a prerequisite for the granting of water permits.

Water Resources

Comment:

EPA is concerned about groundwater use by all sources in the general project area. Intrepid's proposed groundwater use will have a significant impact on the area's aquifers, especially the Rustler Formation and possibly the Caprock Formation.

Smith, Rhonda; USEPA Region 6

Response:

Comment is noted and has been considered in the EIS.

Comment:

Due to our water conservation program and process improvements at our East Plant, we expect to reduce our use of Caprock water by 700 - 900 gallons per minute by the end of the year. As a result, if we need to use Caprock water for the HB Project, we expect our Caprock water conservation efforts to significantly offset any increased use for the HB Project.

Huett, Philip

Response:

Updates to the change in water usage will be considered in the Final EIS.

Comment:

The 3 monitoring wells are located south of flood pools HB North and HB Crescent and east of flood pools HB South and HB Eddy, yet Figure 3.3-7 indicates that the potentiometric flow direction of groundwater is toward the west and southwest. This means that the 3 monitoring wells are located up-gradient and cross-gradient of the flood pools; no wells downgradient of the flood pools appear proposed or present. This appears to be a major flaw in the methodology of detecting and controlling leakage from the flood pools.

Thomas, Charles; NM Mining and Minerals Division

Response:

The potentiometric flow directions in Figure 3.3-7 are for the Rustler Formation. The proposed monitoring wells are to monitor for potential leaks during the in-situ leaching of the mine workings, which are in the Salado Formation. The Salado is not an aquifer, and as such has no groundwater flow directions. The proposed monitor well locations are based on the flood pool design elevations and locations, primarily to ensure that the brine in the flood pools does not overflow into other inactive workings not intended as a target for in-situ solution mining. The flood pools are located well below the existing potable aquifers. The brine solution is unlikely to migrate outside of the pools and would be unable to contaminate the fresh water aquifers if it did.

Water Resources

Comment:

Alternatives to utilizing high quality water sources in the solution mining process should be strongly encouraged. Solution mining using water sources that qualify as drinking water may not be the most appropriate use of an already scarce supply when there exists in the area a ready supply of brackish water and other low quality aquifers that have largely already been developed and are currently already appropriated for industrial use. The proposal should explain the reasons for the use of the higher quality water sources and the economic and other impacts of using a lower quality water source.

Thomas, Charles; NM Mining and Minerals Division

Response:

Comment is noted and will be considered. The Draft EIS explains that Alternative B, with its proposed use of potable water, was developed primarily to evaluate the effects of supplementing the Rustler water due to the conclusions of the water model that the Rustler wells may not have adequate yield to supply all water needed for the flood pools. The Office of the State Engineer has already granted Intrepid the right to use Caprock water in its mining operations.

Wildlife

Comment:

Section 4.2.8.2, Page 4-15 Comment. The third bullet in this section, second line, states implementation of a plan should include a biologic inventory of cave species before groundwater pumping begins. Intrepid is extremely concerned with this requirement as the cave locations are not known by Intrepid and the area has already been subject to significant past mining and oil and gas impacts. This requirement has significant potential to delay the project. Additionally, karst and cave features may not contain water, and groundwater pumping may not affect the water level in the caves. We respectfully recommend that this requirement be removed. Intrepid has committed to working with the BLM to install groundwater monitoring wells adjacent to the critical karst areas as part of the groundwater monitoring program and Intrepid believes that monitoring of the water levels in the known cave and karst areas will provide adequate protection of biologic species that may be in the caves and karsts.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This mitigation measure is included as a recommendation that would enable BLM to monitor and apply adaptive management to minimize adverse impacts to important caves. If this mitigation measure is selected in the Record of Decision, BLM will work with Intrepid to identify the locations of the important caves in order to determine which should be surveyed and monitored. At this stage, this mitigation measure is a recommendation by the resource specialist and should be left in the EIS for consideration by the decision-maker, who can choose to modify or exclude this mitigation measure as part of the Record of Decision.

Comment:

Waterfowl protection: Intrepid's solar evaporation pond design incorporates features that have been demonstrated to be unattractive to waterfowl. However, Intrepid will provide and implement an active monitoring and hazing program plan to further ensure waterfowl protection. This plan should be submitted by the end of the summer.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

New information received in time will be incorporated into the Final EIS.

Comment:

Migratory bird nesting: If a favorable Record of Decision (ROD) is issued by the BLM based on the current anticipated schedule for ROD issuance, construction would likely commence shortly before or about the same time as the migratory bird nesting season starts and would continue through the nesting season (approximately March 1 through August 31). Intrepid would commit to surveying any area proposed to be cleared for bird nesting activity and create a reasonable buffer area around the nesting site (during the nesting season) that would not be cleared until the nesting site was no longer used. It is Intrepid's understanding that this is an allowed mitigation action by BLM so that clearing activities can continue during the bird nesting season. Intrepid respectfully notes that prohibition of clearing during nesting season would significantly impact the timing for potash production from the HB Project and would have a negative economic impact on Intrepid.

Ryan, Kevin; Intrepid Potash, Inc.

Response:

This will be added as a mitigation measure in the Wildlife section of the Final EIS.

Wildlife

Comment:

The presence of the water affects the humidity levels of the caves. Some species of bats require a high humidity level to use a cave for a nursery or a roost.

Harrington, Ken

Response:

Comment is noted and will be considered.

Comment:

Drawdown would cause a maximum 64% reduction in surface seep/spring flow under the Proposed Action or Alternative C and a maximum 31% reduction under Alternative B. Any reduction in surface wildlife water availability should be mitigated by providing supplemental clean water, potentially from precipitation-fed drinkers. Water from drinkers should be available year long and to all classes of wildlife, and be fenced to prevent trampling by livestock. If steep-sided, the drinkers should also have escape ramps installed and maintained to reduce incidental losses to wildlife attracted to the water source.

Wunder, Matthew; NM Dept of Game and Fish

Response:

There are only 3 wildlife watering facilities in or near the project area, all of which are supplied by precipitation. Therefore, the drawdown would not affect wildlife water availability. There are no fresh water springs or seeps in the project area. The known water bodies are highly saline (30,000+ TDS) and are not generally used by wildlife.

Comment:

The water, to my knowledge, has not been examined for any living microorganisms or macro organisms, but I would be surprised if none existed.

Belski, Dave

Response:

The biological inventory of cave species recommended as a mitigation measure in Section 4.2.8.2 would document the species that rely on caves and whether there is water there. This information would be used to determine whether further monitoring and mitigation are needed if the project is approved.

Wildlife

Comment:

Floatovoltaics may be a feasible solution to the problem of waterfowl landing, resting, frequenting, and attempting to feed on the large waste water ponds which have tremendously high salt contents. These ponds with high salt concentrations are not healthy for the waterfowl that are attracted to them.

Floatovoltaics is a relatively new concept in which photovoltaic arrays (PVA's) are densely packed over water environments on pontoon platforms that float. With a sufficient density of PVA's, the underlying waste water pond would not look/appear to be so attractive from the migrating waterfowl looking for a water source. This technology could also be utilized with netting over the surface of the water. The entire system could then raise/lower depending upon the water levels in the waste water ponds.

The benefit of the floatovoltaic system would be two-fold; it would not only serve to decrease the impacts of anthropogenic development on the migrating waterfowl and other avian species, but also would serve to supply energy either locally to the mine operations, or regionally through the power grid, to either save the mining company money, or perhaps even generate income for the mining corporation. Accordingly, MMD would recommend that the floatovoltaic system should be evaluated appropriately in the DEIS.

Thomas, Charles; NM Mining and Minerals Division

Response:

The primary purpose of a Floatovoltaic® system (by Thompson Technology Industries, Inc.) is to provide a place for establishing a photovoltaic system to generate electricity and to reduce direct sunlight on the water body. Because this system would reduce evaporation by covering the water surface, it would conflict with the primary purpose of the evaporation ponds. Other mitigation measures, proposed in Section 4.8.8 on page 4-79 of the Draft EIS, that were recommended by a representative of the USFWS, would be more effective. A statement calling for monitoring the effectiveness of any mitigation measures and the use of adaptive management to make changes as needed will be incorporated into the Wildlife Mitigation Measures section (Section 4.8.8 in DEIS) of the Final EIS.

Comment:

As stated in the DEIS, the evaporation ponds could pose a threat to avian migratory species. Pursuant to the MBTA, EPA encourages BLM to coordinate mitigation measures to protect migratory birds in relation to the proposed evaporation ponds with the U.S. Fish and Wildlife Service and the New Mexico Department of Game and Fish.

Smith, Rhonda; USEPA Region 6

Response:

The list of potential mitigation measures included in the DEIS, Section 4.8.8, page 4-79, was developed based on communication with a representative of the USFWS (Murphy 2010). Monitoring may result in changes to the mitigation measures as effectiveness is evaluated.

Wildlife

Comment:

Groundwater drawdown would also adversely affect 836 to 840 acres of woody riparian vegetation under the Proposed Action or Alternative C, or 656 acres under Alternative B. Woody riparian vegetation is disproportionately important to wildlife, particularly breeding birds, in arid and semi-arid areas. Significant loss of this habitat type could be compensated by habitat improvement projects elsewhere on the project area.

Wunder, Matthew; NM Dept of Game and Fish

Response:

Comment is noted and will be considered. Much of the woody vegetation around Clayton lake consists of unwanted Tamarisk; An invasive species that the BLM is trying to eradicate.