

**GROUND WATER DISCHARGE PERMIT
INTREPID POTASH COMPANY, DP-1681
HBP IN-SITU PROJECT
Draft – December 1, 2009**

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit, DP-1681, to HB Potash, LLC (HBP), pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control discharges of water contaminants from the HBP's Class V injection wells, extraction wells, solar evaporation ponds and potash processing mill and brine management facility into ground and surface water, so as to protect ground and surface water for actual and potential future use as domestic and agricultural water supply and other uses. In issuing this Discharge Permit, NMED has determined that the requirements of 20.6.2.3109.C NMAC have been met.

Facility Description

DP-1681 is being issued to cover the integrated processes associated with in-situ leaching of existing subsurface potash mine workings. HBP will produce ground water from the Magenta or Culebra Member of the Rustler Formation from four production wells. The produced water will be conditioned by adding salt from the existing HBP West Plant salt tailings and/or recycled salt derived from the new HB Mill to form an injectate that is saturated with respect to sodium chloride. HBP will introduce the injectate into the lower portion of existing underground potash mines via six Class V UIC injection wells. The existing mines to be flooded include the HB Potash North Mine, the HB Potash South Mine, the HB Crescent Mine, and the HB Eddy Mine. As a result of injecting the saturate brine, dissolution of potassium chloride will occur from the floors, pillar walls, peripheral walls and ceilings of the mine workings. The pregnant brine (PB) is pumped from the workings through five extraction wells and transferred through a pipeline to a network of approximately 23 synthetically lined solar evaporation ponds. HBP uses evaporation and decantation processes to precipitate a mixture of solid sodium and potassium chloride within the lined evaporation ponds. HBP will mechanically harvest the solid sodium and potassium chloride and transfer it to a slurry pit/pump box and mix with brine to create a brine slurry within the solar pond area. The slurry is pumped through a pipeline to the newly constructed HB Mill for further beneficiation. The potassium and sodium chloride are separated in the flotation mill using an amine flotation process. After flotation, standard classification, filtration and dewatering methods are applied to further concentrate the solid potassium chloride product before it is transported from the new HB Mill to the existing North Mine facility for further drying, grading and preparation for sale. The sodium chloride by-product generated in the flotation process is recycled to make additional injectate.

Location

The IPNM project area consisting of the mines, solar evaporation ponds, plant facilities and offices are located approximately 20 miles east of Carlsbad, in Eddy County, New Mexico. The production wells are located in Sections 1 and 2, T21S, R29E. The injection wells are located in Sections 26, 33 and 36, T19S, R30E; Section 23, T20S, R29E; Section 19, T20S, R30E and Section 6, T20S, R31E. The extraction wells are located in Section 36, T19S, R30E; Section 7, T20S, R31E; Sections 4 and 29, T20S, R30E; and Section 26, T20S, R29E. The monitoring/extraction wells are located in Sections 15, 24, and 36, T20S, R30E. The new HB Mill is located in Section 12, T21S, R29E. The solar evaporation ponds and associated monitoring wells are located in Section 2, T21S, R29E. The pipelines connecting the various components of the facility are located in Section 31, T19S, R31E; Sections 26, 27, 33, 34, 35 and 36, T19S, R30E; Sections 6 and 7, T20S, R31E; Sections 3, 4, 9, 15, 16, 19, 20, 21, 24, 25, 28, 29, 33, 34 and 36, T20S, R30E; Sections 1, 2, 3, 11 and 12, T21S, R29E; and Sections 23, 24, 25 and 26, T20S, R29E. The approximate surface expression of the proposed flooded underground mine workings lie within Sections, 26, 33, 34, 35 and 36, T19S, R30E; Sections 14, 15, 22, 23, 24, 25, 26, 27, 34 and 35, T20S, R29E; Sections 1, 2, 3, 4, 9, 10, 19, 20, 21, 28, 29 and 30, T20S, R30E; and Sections 6, and 7, T20S, R31E.

Quantity, Quality and Flow Characteristics of the Discharge

HBP will condition ground water from four Rustler Formation production wells (IP-WS-001, IP-WS-002, IP-WS-003 and IP-WS-004) pumping at a combined average rate of 1,100 gallons per minute. Conditioning is achieved through the addition of sodium chloride produced from two sources: sodium chloride salt from existing HBP tailings, and a sodium chloride brine stream from the new HBP flotation mill. HBP pumps this conditioned injectate through a system of six, Class V Underground Injection Control (UIC) wells (IP-015, IP-017, IP-019, IP-022, IP-029 and IP-031) into the underground workings of four separate, but interconnected, conventionally mined out underground potash mines. The maximum combined injection rate for the six permitted injection wells is 2,000 gpm. The injectate contains dissolved proportions of approximately 24% sodium chloride, 1% potassium chloride, 0.5% magnesium chloride and 0.4% calcium sulfate. The injectate selectively dissolves and leaches potassium and magnesium chloride salts from the floors, pillar walls and ceiling of the former underground mines where interconnected potassium chloride (KCl) is exposed to the injectate solution producing a PB.

HBP extracts the PB from the underground workings through a system of five extraction wells (IP-020, IP-016, IP-018, IP-028, and IP-030). The average combined rate from the five extraction wells is 1,100 gpm. Extracted PB is piped to a solar evaporation and salt harvesting facility. The maximum permitted discharge to the solar evaporation ponds is 4,608,000 gallons per day (3,200 gpm).

The solar evaporation and salt harvesting facility consists of approximately 23 individual, solar evaporation ponds ranging from 16 to 26 acres in surface extent which cover a combined area of approximately 520 acres. The ponds are synthetically lined and covered with an 18-inch thick layer of consolidated and hardened salt that provides a structural platform for the operation of

mechanical harvesting equipment without damaging the integrity of the underlying synthetic liner.

Once the solar evaporation ponds are filled to design elevations KCl is precipitated as evaporation of PB occurs. Upon near-complete evaporation of PB, a mixture of potassium and sodium salts are harvested from the solar evaporation ponds by mechanical scrapers and deposited in a slurry pit/pump box located within the solar evaporation ponds facility where the harvested salts are remixed with process brine to form a slurry.

The slurry is pumped through a pipeline to the new HB Mill where potassium chloride is separated from other salts using an amine flotation process. The sodium chloride by-product from the flotation and refining process is returned to the injectate conditioning unit where it is reused to produce conditioned (saturated) injectate brine.

HBP uses portable pumps to manage brine solutions within the solar ponds. Throughout this process, a brine enriched in magnesium chloride (MgCl) is produced as a by-product stream which HBP sequentially segregates and pumps into one of the lined ponds within the solar pond area, where it concentrates as MgCl enriched bitters. HBP intends to beneficiate this by-product stream into a commercial magnesium product as market conditions allow. If HBP is unsuccessful in beneficiating and selling this product, the MgCl bitters may be returned to the underground workings upon completion of the in-situ leaching project.

All of the brine streams including the Rustler source water, conditioned injectate, PB, brine by-product from the flotation mill, brine make-up water, and brines managed in the solar evaporation ponds exceed water quality standards under WQCC Regulations in Section 20.6.2.3103.B NMAC for chloride, sulfate and total dissolved solids (TDS). In addition, concentrations of arsenic, barium, cadmium, chromium, lead, mercury, and selenium may be elevated.

Characteristics of Ground Water

Ground water beneath the facility exists in the Magenta Dolomite Member and the Culebra Dolomite Member of the Rustler Formation, and in the Dewey Lake Formation. Depth to ground water within the Magenta ranges from approximately 200 to 270 feet below ground surface in the solar pond area. Potentiometric surface levels in the Magenta are generally 36 to 257 feet above the top of the Magenta Member indicating it presently is a confined aquifer. Depth to ground water within the Culebra Dolomite Member is approximately 245 feet below ground surface. The potentiometric surface is approximately 195 feet above the top of the Culebra Dolomite Member indicating it also is a confined aquifer. Depth to water in the Dewey Lake Formation is approximately 198 feet below ground surface based on data from well IP-WW-007.

Total Dissolved Solids (TDS) concentrations in the Magenta Member range between 1,400 and 120,000 milligrams per liter (mg/l). TDS concentrations in the Culebra Member ranges from approximately 110,000 to 120,000 mg/l. TDS concentrations in the Dewey Lake Formation range from 4500 to 5300 mg/L based on data from well IP-WW-007.

General

HBP's Discharge Plan includes the discharge permit application dated March 14, 2008. HBP has submitted additional application materials including: a Draft Hydrogeological Investigation and Groundwater Monitoring Plan report dated October 31, 2006 and responses to NMED's requests for additional information including a series of Technical Memorandums (DP-001 through DP-011). All discharges shall be managed in accordance with the Discharge Plan and all relevant submittals as conditioned by this Discharge Permit.

Issuance of this Discharge Permit does not relieve HBP of its responsibility to comply with all conditions or requirements of the WQA, WQCC Regulations, and any other applicable federal, state and/or local laws and regulations, such as zoning requirements and nuisance orders.

Pursuant to 20.6.2.3109.E NMAC, NMED reserves the right to modify permit requirements in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated, or the standards of 20.6.2.3103 NMAC are being or may be violated. This may include a determination by NMED that operational practices approved under this Discharge Permit are not protective of ground and surface water quality, and that a modification is necessary to protect water quality and/or abate water pollution. Permit modification may include, but is not limited to, lining or relining impoundments, changing discharge locations, changing waste management practices, expanding monitoring requirements, and/or implementing abatement of water pollution.

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. HBP is discharging effluent or leachate from the HB In-situ Project so that such effluent or leachate may move directly or indirectly into ground water within the meaning of 20.6.2.3104 NMAC.
2. HBP is discharging effluent or leachate from the HB In-situ Project so that such effluent or leachate may move into ground water of the State of New Mexico which has an existing concentration of 10,000 milligrams per liter or less of total dissolved solids within the meaning of 20.6.2.3101.A NMAC.
3. The discharge from HB In-situ Project is not subject to any of the exemptions of 20.6.2.3105 NMAC.
4. The HB In-situ Project Facility is located at a place of withdrawal of water for present or reasonably foreseeable future use within the meaning of 20.6.2.3101A NMAC.

III. PERMIT CONDITIONS

The following conditions shall be complied with by HBP and are enforceable by NMED. HBP is permitted to discharge water contaminants subject to the following conditions.

OPERATIONS

1. HBP shall implement the following operational requirements in accordance with the WQCC Regulations at 20.6.2.3106.C and 3107 NMAC to ensure compliance with 20 NMAC Chapter 6, Parts 1 and 2. [20.6.2.3106.C NMAC][20.6.2.3107 NMAC]

Discharge Flow Description and Authorization

2. HBP is authorized to manage discharges of tailings and brine as follows:
 - A. *Floatation Mill and Filtration Plant:* A granulated mixture of potassium and sodium chloride harvested from the solar ponds is processed at the new HB Mill and Filtration Plant. An amine floatation reagent, oil extender and frothing agent are added to the slurry to facilitate separation of potassium chloride from sodium chloride in the floatation process. Concentration of the potassium chloride product is carried out in rougher floatation cells where air is bubbled through the brine slurry. Several iterations of floatation and centrifuge separation are applied to the potassium chloride product stream rendering a refined potash cake containing between 4 to 7 percent moisture content. This product is then conveyed to a dryer system at the existing IPMN North Plant where the moisture is removed and the product prepared for market. The sodium chloride tailing stream derived from the rougher floatation tanks is piped to the Ground Water Conditioning Unit where it is mixed with Rustler ground water to prepare brine injectate that is then pumped to HBP's injector wells piped into the underground leach lakes.
 - B. *Ground Water Conditioning Unit:* Ground water produced from four ground water production wells screened in the Rustler Formation will be pumped to the Ground Water Conditioning Unit located at the new HB Mill. Ground water is mixed with sodium chloride (NaCl) tailings brine and solid NaCl to form a conditioned injectate. After HBP constructs the new HB Mill and begins harvesting from the solar evaporation ponds, the entire NaCl tailings stream from the new mill will be used to condition Rustler water for injectate. Prior to the new HB Mill operation and during periods when the new HB Mill does not produce enough NaCl, NaCl will be obtained from the existing West Mine facility.
 - C. *Brine Injection into Underground Mine Workings:* Conditioned brine (saturated with NaCl) pumped from the Ground Water Conditioning Unit will be injected at a maximum rate not to exceed 2,000 gpm into the four underground mine workings identified in Table 1. The brine flood levels shall not exceed the maximum flood elevations above Mean Sea Level (MSL) listed in Table 1 below.

Table 1: Table of Maximum Flood Elevations

Mining Area	Lower Elevation MSL	Upper Elevation MSL	Maximum Flood Elevation MSL
HB North Mine Open Workings	1,975'	2,450'	2,325'
HB Crescent Mine Open Workings	2,050'	2,340'	2,200'
HB South Mine Open Workings	2,375'	2,640'	2,525'
HB Eddy Mine Open Workings	2,575'	2,750'	2,675'

- D. *Extraction Wells:* PB shall be pumped from up to five extraction wells at a combined rate not to exceed 3,200 gpm through a network of pipelines and booster pump stations located at ground level to the solar evaporation ponds. The average annual combined rate from the five extraction wells is 1,100 gpm.
- E. *Evaporation Solar Ponds:* PB shall be discharged to a system of approximately 23 solar evaporation ponds managed to concentrate salts through precipitation, creating solid salt precipitate that HBP will mechanically harvest and transport via scrapers to a slurry makeup area located within the solar pond area. HBP shall pump the slurry of sodium chloride and potassium chloride from the slurry pit/pump box by HDPE pipeline to the new HB Mill.
- F. *MgCl Bitterns Management Evaporation Pond:* A small by-product stream of brine enriched with magnesium chloride mixed with trace amounts of sulfate and other insoluble residuals are generated during normal operation of the solar evaporation ponds. The magnesium enriched brine by-product stream shall be pumped to one solar evaporation pond designated specifically for magnesium chloride storage and/or disposal. HBP shall use moveable, HDPE pipelines and a trailer-mounted pump to transfer the magnesium enriched brine stream within the solar pond system. The amount of magnesium enriched brine generated at full build-out of the solar pond facility is estimated not to be greater than 20 gpm of combined flow.
- G. *Pipelines:* Pipelines and pumps of various capacities and construction deliver ground water and brines to the various components of this in-situ mining operation. The pipeline systems include:
- 1) *Ground Water Production Lines:* Rustler ground water shall be pumped from the Rustler production wells over a distance of up to 3 miles through HDPE pipelines to the new HB Mill to be conditioned into injectate.
 - 2) *Injectate Lines:* Injectate shall be pumped from the brine conditioning unit at the new HB Mill to the injection wells over a distance of up to 11 miles through HDPE pipelines.
 - 3) *Pregnant Brine Lines:* PB shall be pumped from extraction well heads to the solar evaporation ponds through a system of up to 13 miles of HDPE pipeline.

- 4) *Harvested Product Slurry Lines*: Harvested slurry shall be pumped from the slurry pit/pump box inside the solar pond area to the new HB Mill through a 2.5 mile HDPE pipeline.

Plans and Specifications

3. HBP shall submit to NMED for approval, a minimum of 30 days prior to construction, plans and specifications for the synthetically lined solar evaporation ponds, including a plan view of the evaporation pond area showing all facilities, lift and booster pump stations, injection well-head pads and extraction well-head pads. As-built documentation of the solar evaporation ponds, pond liners, pipelines, and final pond capacity calculations shall be submitted to NMED within 90 days following completion of pond construction. A New Mexico registered professional engineer must certify construction plans and specifications, supporting design calculations, and as-built documents. [20.6.2.3109 NMAC]

Solar Evaporation Ponds

4. HBP shall construct the solar evaporation ponds in accordance the conceptual plans submitted in the discharge plan application dated March 14, 2008 and detailed design plans submitted pursuant to Condition 3 above. [20.6.2.3109 NMAC]
5. HBP shall maintain a minimum of 18 inches of freeboard in the solar evaporation ponds at all times. In the event that a minimum of 18 inches of freeboard cannot be maintained at all times, HBP shall submit a corrective action plan for NMED approval to modify the management of discharge volumes. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

Pipeline and Well Head Construction Pads

6. HBP shall construct storm water underflow structures or bury pipelines at low points along the pipeline corridor to enable storm water to bypass the pipeline during storm events. [20.6.2.3109 NMAC]
7. HBP shall construct a pipeline crossing under Highway 62/180 to house the brine injectate and PB and dilution water pipelines. HBP shall submit to NMED for approval a minimum of 60 days prior to construction final plans and specifications for the pipeline crossing. [20.6.2.3109 NMAC]
8. HBP shall construct and maintain berms around all pump stations and wellhead pads to contain and minimize impacts associated with unpermitted discharges from the pipeline system. [20.6.2.3109 NMAC]
9. HBP shall construct and maintain storm water diversions around pump stations and wellhead pads sufficient to divert storm water away from these structures. [20.6.2.3109 NMAC]

Pipeline Operation

10. HBP shall operate all brine and process water pipelines in a manner to prevent discharge in areas not authorized by this Discharge Permit. Upon discontinuing the operation of a pipeline or prior to moving a pipeline, all brine, PB or process water within each pipeline shall be released to an authorized discharge location or otherwise properly contained, transferred or disposed of in a manner that does not result in discharges to non-authorized areas. Discharges of brine injectate, PB and process water from pipelines to non-authorized areas must be reported under 20.6.2.1203 NMAC. All maintenance and changes in pipeline operations that result in removal of pipelines and their respective fluids in unauthorized discharge areas must be reported quarterly in accordance with Condition 28. [20.6.2.3109 NMAC]
11. Prior to operating all pipelines, HBP shall install flow meters on the pipeline systems capable of measuring flow rates within an accuracy range of 1%. Flow measurements shall be used as part of the basis for pipeline leak detection. [20.6.2.3107 NMAC]
12. HBP shall perform a mechanical integrity test on each pipeline upon completion of construction and before injectate brine or PB is discharged to the pipelines. The pipelines shall be integrity tested prior to start-up including following standby periods in excess of 180 days. The testing procedures are as follows referenced from the New Mexico Highway and Transportation Department, Standard Specification for Highway and Bridge Construction <http://nmshtd.state.nm.us/main.asp?secid=14860>: [20.6.2.3107 NMAC]
 - A. Each section of the piping system shall be tested under normal working pressures for a period of fourteen (14) hours and proven tight.
 - B. If leaks occur at a joint and/or joints they shall be replaced and the test repeated.
 - C. All pipe or appurtenances that are found to be defective shall be removed and replaced with sound units.
 - D. No piping will be accepted until it sustains pressure without the addition of more fluids.
 - E. The integrity test results shall be certified by a New Mexico registered professional engineer. Any subsequent tests must be certified by a New Mexico registered professional engineer.
13. HBP shall conduct testing on each monitored pipeline during the first three months of operations, in order to establish the normal flow rate variance range between each end of the pipeline. As a starting point, during normal operations (not including periods when the lines are slack) if the leak detection system alarms indicate a variation of 1% or greater of the total operational flow volume of the pipeline an inspector must be dispatched immediately to conduct a visual inspection. Within the initial three months of operation, HBP may propose alternate inspection trigger guidelines, based on actual operational variances, for NMED review and approval. [20.6.2.3107 NMAC]

14. During normal operations if the leak detection system alarms indicate a leak of greater than 5% of the total operational flow volume of the pipeline the pumps shall be shut down automatically, the automatic valve will be closed and a pipeline inspection will commence immediately. During the first three months of operation, HBP may propose alternate shut down trigger guidelines, based on actual operational variances, for NMED review and approval. [20.6.2.3107 NMAC]
15. HBP shall report the date, time, duration and location of all false alarms from the leak detection system in the quarterly reports as described in Condition 28. [20.6.2.3107 NMAC]

Storm Water Management

16. HBP shall manage onsite storm water as follows. [20.6.2.3109 NMAC]
 - A. All solar evaporation pond berms shall be constructed above the grade of the solar evaporation ponds and sloped to route storm water falling on the berms into the solar evaporation ponds with the exception of the outermost perimeter berm.
 - B. Storm water upgradient of the solar pond area designated as Drainage Area 1 and Drainage Area 2 referenced in Technical Memorandum DP-001, shall be diverted around the solar evaporation pond via excavated channels, dikes or other conveyances to outlying areas.
 - C. Storm water upgradient of the new HB Mill shall be diverted around the system via excavated channels and dikes, to the degree possible, to outlying areas north and west of the facility. Construction specifications for the storm water diversion structures shall be included in the as-built plans required in Condition 3.

MONITORING, REPORTING AND OTHER REQUIREMENTS

17. HBP shall conduct the monitoring, reporting and other requirements listed below and summarized in Table 2. [20.6.2.3107 NMAC]

Sampling and Field Measurements

18. Ground Water and Production Well Monitoring - HBP shall monitor ground water quality as follows and summarized in Table 3. [20.6.2.3107 NMAC]
 - A. Monitoring wells IP-WW-001, IP-WW-002, IP-WW-003, IP-WW-004, IP-WW-005, IP-WW-006, IP-WW-007, IP-WW-008, IP-WW-009, IP-WW-010 and the Cowden Windmill well shall be sampled as follows:
 - 1) HBP shall record the depth to the water table to the nearest hundredth of a foot (0.01 ft), quarterly.

2) HBP shall collect samples from each well quarterly and analyze the samples for the water parameters listed in Condition 26A, 26B and 26C below.

B. Rustler Groundwater Production Wells - IP-WS-001, IP-WS-002, IP-WS-003, IP-WS-004 shall be sampled as follows:

1) HBP shall meter ground water produced from each well with a totalizing water meter and shall submit water production volumes quarterly as described in Condition 28

2) HBP shall collect samples from each well quarterly and analyze the samples for water parameters listed in Conditions 26B and 26C.

Table 3 summarizing this schedule is attached to this permit. Analytical results and depth to ground water measurements shall be reported as required in Condition 28 below.

19. PB Effluent Quality – HBP shall collect a sample of the pregnant brine discharged to solar evaporation ponds at the primary outfall semi-annually and analyze the sample for the parameters listed in Conditions 26B and 26C. Analytical results shall be reported as required in Condition 28 below. [20.6.2.3107 NMAC]

20. PB Discharge Volume – HBP shall measure the monthly volume of brine discharged to the solar evaporation ponds using a totalizing meter or other measuring device pre-approved by NMED. Discharge volumes shall be reported as required in Condition 28 below. [20.6.2.3109 NMAC]

21. Storm Water System Monitoring – HBP shall inspect on a monthly basis all storm water impoundments, diversions, and berms for evidence of erosion or other features that may compromise the integrity of the storm water management system. [20.6.2.3107 NMAC]

22. Solar Pond Leak Detection:

A. HBP shall design and install an electro-conductivity based leak detection network at an average designed depth of 60 feet capable of detecting a release of brines from any solar evaporation ponds to the vadose zone. HBP shall conduct at least one electro-conductivity monitoring event of the complete leak detection network per quarter. HBP shall submit results of the monitoring events as part of monitoring report as required in Condition 28 below.

B. Within 120 days after placement of the first brine solution in to the first solar evaporation pond HBP shall submit a baseline electro-conductivity report to NMED. The report shall include the following: [20.6.2.3107 A.(3) NMAC]

1) The accuracy, precision and variability of electrical conductivity between each of the sampling points of the leak detection monitoring system.

- 2) A methodology for identifying the electro-conductivity signature and threshold that would identify a significant release of brine from any solar pond to the vadose zone. The threshold for a significant release may be defined as a measure of electro-conductivity between any two sampling points that exceeds, by one standard deviation, the mean of a population of measures of electrical conductivity collected between said sampling points since inception of the monitoring system.
 - 3) The background electro-conductivity signature shall include no less than three independent sampling events between sampling points of the electrical conductivity network.
 - 4) A proposal for quarterly reporting including: dates of sampling, a map showing the location of electro-conductivity wells and ponds, and the depths of the sampling points, and the results of quarterly sampling.
- C. Upon approval by NMED of the format and content of the proposed quarterly report described in Condition 22B, HBP shall include the report as part of the quarterly reporting required under Condition 28 below.
23. Subsidence Monitoring - HBP shall conduct subsidence monitoring within the surface expression of the underground mines. The subsidence monitoring program shall be able to detect changes in surface elevation that may impair the structural integrity, performance and safe operation of pregnant brine and injectate brine pipelines. [20.6.2.3107 A. NMAC]
- A. Baseline Monitoring – At least 180 days prior to initiation of injection of brine into any of the underground workings of the HBP In-Situ project area, HBP shall initiate a baseline subsidence monitoring study. The study shall be designed to provide baseline ground elevation data for monuments located within the zones of potential additional subsidence identified in Technical Memorandum DP-003. HBP shall measure designated survey points with an accuracy of +/- .01 feet relative to MSL.
 - B. Threshold Subsidence Monitoring: HBP shall survey the elevation of all approved monument locations quarterly and report the elevation data in tabular format as required under Condition 28C.
 - C. In the event subsidence monitoring indicates a potential impairment to the structural integrity, performance and safe operation of product and brine pipelines, HBP shall submit a written notice to NMED including corrective actions if required.
24. Pipeline Control and Leak Detection – All pipelines installed for the purpose of conveying produced water, brine, and potash slurry except those within the solar evaporation pond area shall be fitted with leak detection pressure sensors. HBP shall monitor pipeline pressures and flow rates at each end of their pipeline segments and at least one additional monitoring point in the middle of each segment. Pressure and flow data shall be recorded, stored and reviewed at least daily for anomalous flow conditions. Alarms and automatic shut down systems shall be installed in all pipeline systems. HBP shall submit a written report to NMED providing as-

built drawings of the pipeline system and a written description of the final design, including capacities, sensor locations, standard operating procedures, and shutdown and pipeline draining procedures that HBP will follow to prevent un-permitted release from any pipeline system. Data collected by HBP for the purpose of pipeline control and leak detection shall be reported annually with the January quarterly report and shall be maintained in the HBP discharge permit database for a period of at least five years from the date of approval of this permit. [20.6.2.3107 A.(6) NMAC], [20.6.2.3107 A.(7) NMAC]

25. **Pipeline Inspections:** HBP shall conduct weekly inspections of all pipelines and pumps installed for the conveyance of produced ground water, conditioned brine injectate, PB and brine/potash slurry. The status of all pipeline systems shall be recorded weekly in the HBP mine database system and made available for NMED review upon request. [20.6.2.3107 A (9) NMAC]

Analysis

26. HBP shall analyze water from the monitoring wells, PB and the Rustler production wells for dissolved concentrations of the analytes listed in below. [20.6.2.3107 NMAC]
- A. Field and/or laboratory parameters: pH, temperature and specific conductance, dissolved oxygen, oxidation / reduction potential, static water level below top of casing.
 - B. General chemistry parameters: Sulfate, Chloride, Nitrate + Nitrite (as N), Carbonate, Bicarbonate, Ion Balance, and Total Dissolved Solids.
 - C. Metals: Arsenic, Barium, Cadmium, Calcium, Chromium, Lead, Magnesium, Mercury, Potassium, Selenium and Sodium

Methodology

27. Unless otherwise approved in writing by NMED, HBP shall conduct sampling and analysis in accordance with the most recent edition of following documents. [20.6.2.3107B NMAC]
- A. American Public Health Association, Standard Methods for the Examination of Water and Wastewater.
 - B. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste.
 - C. U.S. Geological Survey, Techniques for Water Resource Investigations of the U.S. Geological Survey.
 - D. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water.
 - E. U. S. Geological Survey, et al., National Handbook of Recommended Methods for Water

Data Acquisition.

- F. Surface water monitoring must also be conducted according to test procedures approved under Title 40 Code of Federal Regulations Part 136.

Reporting

- 28. HBP shall submit quarterly reports by the last day of January, April, July and October of each year that includes the following information and format. Table 3 summarizing the monitoring requirements is attached to this permit. [20.6.2.3107 NMAC]
 - A. A summary of all activities and data related to the permitted discharge during the preceding quarter. This includes operational activities, monthly flow volumes, spills, maintenance, repairs, well drilling, water management, construction or demolition of structures including new or existing domestic waste facilities, water quality trends, precipitation, trends in water levels and elevations of subsidence monitoring monuments within the project area.
 - B. A single table in a paper and electronic format (EXCEL spreadsheet) of water quality data with constituents analyzed and water levels measured during a single event shown in columns. Tabulated electrical conductivity shall include the measured field values and corrected values to 25 degrees Celsius. Monitoring sites will be shown in rows. Each additional sampling event shall be entered as an additional row to the existing spreadsheet with the date noted in a column on the left. Values exceeding standards will be bolded. Any constituent not analyzed for a particular site will be shown as “NA”, any site not sampled will be shown as “NS” with an associated reason, and any site not measured for water levels will be shown as “NM” with an associated reason.
 - C. A potentiometric map shall be prepared semi-annually which incorporates all water level data for the monitoring wells listed in Condition 18 A and B from the most recent sampling event.
 - D. Copies of the signed laboratory analyses sheet shall be provided quarterly in an electronic format.
 - E. A table of quarterly elevation measurements of subsidence monitoring stations that provides the history of elevation change relative baseline elevations described in 23 C.

CONTINGENCY PLAN

Ground Water Exceedences

- 29. In the event that monitoring indicates ground water standards are exceeded during the term of this Discharge Permit, upon closure of the facility or during post-closure monitoring, HBP shall collect a confirmatory sample from the monitoring well(s) within 15 days to confirm the initial sampling results. Within 30 days of confirmation of ground water contamination,

HBP shall submit a plan to NMED to abate impacts to ground water caused by HBP's operation. At a minimum, the plan shall address the following elements: 1) development and implementation of ground water investigation to define the source, nature and extent of contamination, 2) evaluation and selection of a proposed abatement option based on the findings of the ground water investigation activities; and 3) a schedule for implementation of the abatement activities. The site investigation and abatement option shall be consistent with the requirements and provisions of 20.6.2.4101, 4103, 4106C & E, 4107, and 4112 NMAC. The abatement plan shall be implemented within 30 days of NMED approval. [20.6.2.3107A(10) NMAC]

Operational Failures

30. In the event of a berm breach, pipeline break, pump failure or other system failure at the facility that threatens ground water as defined by 20.6.2.3101 NMAC, tailings and process waters shall be contained, pumped and/or transferred to areas of the facility that impose minimal impacts to ground water quality. Failed components shall be repaired or replaced as soon as possible and no later than 72 hours from the time of failure. Inconsequential failures that do not threaten ground water quality shall be reported in the quarterly monitoring reports and include a brief action plan and completion report. [20.6.2.3107A(10) NMAC]
31. If NMED or HBP identifies any other failures of the discharge plan or system not specifically noted in this permit, NMED may require HBP to develop for NMED approval contingency plans and schedules to address the failures. [20.6.2.3107A(10) NMAC]

Spill Reporting and Remediation

32. In the event of a spill or release that is not prescribed under this Discharge Permit, HBP shall initiate the notifications and corrective actions as required in 20.6.2.1203 NMAC. HBP shall take immediate corrective action to contain and remove or mitigate the damage caused by the discharge. Within 24 hours after discovery of the discharge, HBP shall verbally notify NMED and provide the information required by 20.6.2.1203.A.1 NMAC. Within 7 days of discovering the discharge, HBP shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. HBP shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]

CLOSURE

33. Upon cessation of operation of the HBP in-situ leaching and solar pond evaporation facility, HBP shall perform the following actions. [20.6.2.3107A(11) NMAC]
 - A. Hydrocarbon contaminated soils shall be characterized and removed for onsite remediation or offsite disposal.
 - B. All pipelines shall be drained, rinsed and removed. Pipeline corridors and access roads shall be removed and the access road reclaimed.

- C. The solar evaporation pond liners shall be removed or ripped and buried in place.
 - D. After completion of salt harvesting, the evaporation pond berms shall be breached and the ponds regraded to create positive drainage.
 - E. All construction and maintenance buildings will be removed.
 - F. Unneeded power lines shall be decommissioned.
 - G. All borrow areas shall be reclaimed.
34. HBP shall follow the detailed plan submitted for closure of the pipeline distribution network and the solar evaporation system, including but not limited to, removal of pipelines, removal of buildings, structures and equipment, removal or perforation of liners, regrading of berms and impoundments, post closure monitoring and abandonment of monitoring, injection and extraction wells. [20.6.2.3107A(11) NMAC]
35. HBP shall continue ground water monitoring as described in Condition 18 of this permit for two years after closure to confirm the absence of ground water contamination. If monitoring results show that the ground water standards in Section 20.6.2.3103 NMAC are being exceeded, HBP shall implement the contingency plan described in Condition 30 of this permit. Following notification from NMED that post-closure monitoring may cease, HBP shall plug and abandon all monitoring wells in accordance with *NMED Guidelines for Monitoring Well Construction and Abandonment* (copy enclosed). When all post-closure requirements have been met, HBP may request to terminate the discharge permit. [20.6.2.3107A(11) NMAC]

FINANCIAL ASSURANCE

36. HBP shall maintain financial assurance in an amount \$3,641,986.00 to cover the cost of a third party to implement the closure plan required by Conditions 33 through 35 of this discharge permit as proposed in technical memorandum DP-010-2. The financial assurance shall ensure that funds will be available to implement the closure plan if at any time after cessation of operation of the HBP in-situ brine injection, extraction, evaporation and potash refining facility HBP is unable, unwilling, or otherwise fails to implement closure of the facility. [20.6.2.3107A(11) NMAC]
37. Within 60 days prior to initiation of construction, HBP shall execute the financial assurance instrument as proposed in technical memorandum DP-010-2. HBP shall provide NMED with an original signed and notarized copy of the financial assurance instrument. The financial assurance instrument shall name NMED as the beneficiary. The instrument shall be maintained until the financial assurance is released in writing by NMED. [20.6.2.3107A(11) NMAC]
38. The financial assurance, including any revised financial assurance, shall meet the following standard requirements. [20.6.2.3107A(11) NMAC]

- A. The financial assurance shall be executed in an amount equal to the NMED approved closure cost estimate. The closure cost estimate shall include direct costs associated with third party implementation of the closure plan, contingency costs and NMED oversight and administration costs, including indirect costs.
- B. NMED shall be named as the sole beneficiary in the financial assurance instrument.
- C. The financial assurance instruments shall remain in effect throughout the term of this discharge permit, including the post-closure period, and until released in writing by NMED. The financial assurance shall remain in place at all times, including lapses in discharge permit coverage, late discharge permit renewal or temporary shut down of facilities covered under this discharge permit.
- D. The financial assurance shall include a method for adjustments due to inflation, new technologies, and NMED approved revisions to the closure plan based on continued investigations or other information.
- E. No more than once every 12 months HBP may request that NMED review remaining closure measures, including alternative closure measures that NMED has approved. The request for closure review shall describe the closure measures completed and shall contain an updated cost estimate for remaining closure measures. If NMED approves the description of completed closure measures and the cost estimate for remaining closure measures, NMED will adjust the amount of financial assurance to reflect the revised cost estimate.
- F. The financial assurance shall be evaluated, and if necessary, revised to comply with WQCC financial assurance regulations if and when such regulations are promulgated and become effective.
- G. The financial assurance shall include a provision, which requires the financial assurance provider to provide at least 120 days written notice to NMED and HBP prior to cancellation or non-renewal of the financial assurance. HBP shall obtain an NMED-approved alternate financial assurance mechanism within 60 days of such notice. If HBP fails to obtain alternate financial assurance within 60 days, the current financial assurance shall become immediately payable to the standby trust fund.
- H. If NMED determines that implementation of the closure plan is required and that HBP is unable or unwilling or will otherwise fail to conduct or complete the closure requirements of this discharge permit, then NMED may proceed with forfeiture of all or part of the financial assurance. Prior to beginning a forfeiture proceeding, NMED will provide written notice, by certified mail return receipt requested, to HBP and to all financial assurance providers, if applicable, informing them of the determination to forfeit all or a portion of the financial assurance. The written notice will state the reasons for the forfeiture and the amount to be forfeited. The amount shall be based on the total cost of performing closure, including post-closure monitoring and maintenance, in accordance

with this discharge permit and all applicable laws and regulations. NMED will also advise HBP and all financial assurance providers, if applicable, of the conditions under which forfeiture may be avoided. Such conditions may include, without limitation, an agreement by HBP, by a financial assurance provider, or by an NMED- approved third party to perform closure, including post-closure monitoring and maintenance, in accordance with this discharge permit and all applicable laws and regulations, and a demonstration that such person has the financial ability and technical qualifications to do so. All financial assurance forfeited shall become immediately payable to the standby trust fund or as otherwise provided in the approved instruments. Forfeited funds shall be used to complete performance of the closure plan. If the forfeited amount is insufficient, HBP shall be liable for the remaining costs. If the amount forfeited is more than necessary, the excess amount shall be refunded to the person from whom it was collected.

- I. All or part of the financial assurance shall be released or modified when NMED determines that the corresponding closure and post-closure measures covered by the financial assurance have been completed according to the closure plan requirements of this discharge permit.
39. Within 30 days of NMED approval of a revised closure plan or post-closure measures, or upon determination that existing financial assurance is inadequate, HBP shall submit to NMED for approval a revised closure cost estimate and financial assurance instruments. Within 30 days of NMED approval of the revised financial assurance instruments, HBP shall execute the revised financial assurance instruments and submit signed, notarized copies to NMED. [20.6.2.3107A(11) NMAC]

GENERAL TERMS AND CONDITIONS

Record Keeping

40. HBP shall maintain at its facility a written record of all data and information on monitoring of ground water, surface water, seepage, meteorological conditions pursuant to this Discharge Permit including the following information. [20.6.2.3107.A NMAC]
- A. The date, exact time, and exact location of each sample collection or field measurement.
 - B. The name and job title of the person who performed each sample collection or field measurement.
 - C. The date of the analysis of each sample.
 - D. The name and address of the laboratory and the name and job title of the person that performed the analysis of each sample.
 - E. The analytical technique or method used to analyze each sample or take each field measurement.

- F. The results of each analysis or field measurement, including the raw data.
 - G. A description of the quality assurance and quality control procedures used.
41. Such data and information described in Condition 43 shall also be maintained on all split and duplicate samples, spike and blank samples, and repeat samples. [20.6.2.3107A NMAC]
 42. HBP shall maintain a written record of any spills, seeps, or leaks of effluent, leachate or process fluids not authorized by this Discharge Permit. [20.6.2.3107A NMAC]
 43. HBP shall maintain a written record of the operation, maintenance and repair of all facilities/equipment used to treat, store, or dispose of wastewater; to measure flow rates; to monitor water quality; or, to collect other data required by this Discharge Permit. This record shall include repair, replacement or calibration of any monitoring equipment and repair or replacement of any equipment used in the conveyance of process waters throughout the permitted area. [20.6.2.3107A NMAC]
 44. Notwithstanding any company record retention policy to the contrary, until such time as NMED determines that all closure measures have been completed in accordance with the requirements of this Discharge Permit, HBP shall retain copies of all data, records, reports, and other documents generated pursuant to this Discharge Permit. Such record retention period may be increased by NMED at any time upon written notice to HBP. [20.6.2.3107A NMAC]
 45. All such data, records, reports, and other documents generated pursuant to this Discharge Permit, shall be provided to NMED upon request. [20.6.2.3107A NMAC]

Inspection and Entry

46. HBP shall allow the Secretary or an authorized representative of NMED, upon the presentation of credentials, to conduct the following tasks. [20.6.2.3107D NMAC] [74-6-9.B & E WQA]
 - A. Enter at reasonable times upon HBP's premises or at any other location where records are kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 - B. To inspect and copy at reasonable times, any records required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 - C. To inspect, at reasonable times, any facility, equipment (including monitoring and control equipment or treatment works), practices or operations regulated or required under this Discharge Permit, or under any federal or WQCC regulation.
 - D. Sample or monitor at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the New Mexico Water Quality Act, any

effluent, water contaminant, or receiving water at any location before or after discharge.

47. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC]

Duty to Provide Information

48. Within a reasonable time after a request from NMED, which time may be specified by NMED, HBP shall provide NMED with any relevant information to determine whether cause exists for modifying, terminating, or renewing this Discharge Permit, or to determine whether HBP is in compliance with this Discharge Permit. [20.6.2.3107D NMAC][74-6-9.B & E WQA]
49. Nothing in this Discharge Permit shall be construed as limiting in any way the information gathering authority of NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107D NMAC][74-6-9.B & E WQA]

Spills, Leaks and Other Unauthorized Discharges

50. This Discharge Permit authorizes only those discharges specified herein. Any discharge into ground water not authorized by this Discharge Permit is a violation of § 20.6.2.3104. NMAC. HBP must report any such discharge to NMED, and it must take corrective action to contain and remove or mitigate the damage caused by the discharge, as required by § 20.6.2.1203. NMAC. [20.6.2.1203 NMAC]

Modifications/Amendments

51. HBP shall notify NMED of any changes to its process water collection or disposal system, including any changes in the wastewater flow rate or the volume of wastewater storage, or of any other changes to its mining operations or processes that would result in any significant change in the discharge of water contaminants. HBP shall obtain NMED approval, as a modification to this Discharge Permit pursuant to 20.6.2.3109.E, F, or G NMAC, prior to any increase in the quantity discharged, or any increase in the concentration of water contaminants discharged, above those levels approved in this Discharge Permit. [20.6.2.3107C NMAC]

Enforcement

52. Any violation of the requirements and conditions of this Discharge Permit, including any failure or refusal to allow NMED to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject HBP to an enforcement action. Pursuant to WQA § 74-6-10.A and B, such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, suspending or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to the

WQA §§ 74-6-10.C and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA § 74-6-5, the WQCC regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation standard, or order adopted pursuant to such other provision. For certain violations specified in the WQA § 74-6-10.2, criminal penalties may also apply. In any action to enforce this Discharge Permit, HBP waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [74-6 WQA]

Compliance with Other Laws

53. Nothing in this Discharge Permit shall be construed in any way as relieving HBP of its obligation to comply with all applicable federal, State, and local laws, regulations, permits, or orders. [20.6.2 NMAC]

Liability

54. The approval of this Discharge Permit does not relieve HBP of liability should the operation result in actual pollution of surface or groundwater which may be actionable under other laws and/or regulations. [20.6.2.1220 NMAC]

Right to Appeal

55. HBP may file a petition for a hearing before the WQCC on this Discharge Permit. Such petition must be made in writing to the WQCC within thirty (30) days after HBP receives this Discharge Permit. Unless a timely petition for a hearing is made, the decision of NMED shall be final. [74-6-5.N WQA]

Transfer

56. Prior to any transfer of ownership, control, or possession of the permitted facility or any portion thereof, HBP shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Discharge Permit with the notice. HBP shall deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.2.3111 NMAC]

Term

57. The effective date of this Discharge Permit is the date it is issued and signed by the Chief of the Ground Water Quality Bureau. The term of this Discharge Permit expires five (5) years from the date it was issued. To renew this Discharge Permit, the HBP must submit an application for renewal at least 120 days before the expiration date. [74-6-5.H WQA][20.6.2.3109.H NMAC]

Issued this ____ day of _____, 2009

William C. Olson, Chief
Groundwater Quality Bureau
New Mexico Environment Department

Under authority delegated by the Secretary of the New Mexico Environment Department

draft

Table 2: Monitoring Summary for DP-1681, HBP In-situ Project. Monitoring reports are due by the last day of January, April, July and October of each year.

Annual Sampling Frequency	Annual Reporting Frequency	Number of Sites	Sampling Description
4	2	11	Analyses for field parameters, general chemistry and metals in 10 monitoring wells and one windmill well; sampled quarterly.
4	2	4	Analyses for general chemistry and metals in 4 production wells; sampled quarterly.
2	2	1	Analyses for general chemistry and metals of PB at outfall to solar evaporation ponds, sampled semi-annually.
365	12	1	Monthly flow volumes of PB to the solar evaporation ponds using a totalizing meter; reported monthly.
12	2	various	Inspect storm water impoundments, diversions and berms monthly for damage and erosion.
4	2	1	Electro-conductivity monitoring of solar pond leak detection system; conducted quarterly.
4	2	various	Threshold subsidence monitoring of monument locations; conducted quarterly.
365	Maintained onsite	various	Pressure and flow data for the pipeline leak detection system to be recorded, stored and reviewed daily; records maintained onsite.
26	Maintained onsite	various	Inspections conducted weekly on all pipelines and pumps; data recorded weekly and stored onsite.

Table 3: Ground Water and Surface Water Monitoring Parameters and Schedule, DP-1681

Well Number	Field Parameters	Lab Parameters	Major Anions and Cations	RCRA Metals	Reporting Interval
IP-WW-001 IP-WW-002 IP-WW-003 IP-WW-004 IP-WW-005 IP-WW-006 IP-WW-007 IP-WW-008 IP-WW-009 IP-WW-010 Cowden Windmill	Water Temperature pH Dissolved Oxygen Conductivity Oxidation /Reduction Potential Static Water Level (Below TOC)	Specific Conductivity pH Total Dissolved Solids Ion Balance	Sulfate Chloride Nitrate+nitrite (as N) Carbonate Bicarbonate Sodium Potassium Calcium Magnesium	Arsenic Barium Cadmium Chromium Lead Mercury Selenium	Quarterly January April July October
IP-WS-001 IP-WS-002 IP-WS-003 IP-WS-004	Water Temperature pH Dissolved Oxygen Conductivity Oxidation /Reduction Potential Static Water Level (Below TOC)	Specific Conductivity pH Total Dissolved Solids Ion Balance	Sulfate Chloride Nitrate+nitrite (as N) Carbonate Bicarbonate Sodium Potassium Calcium Magnesium	Arsenic Barium Cadmium Chromium Lead Mercury Selenium	Quarterly January April July October
PB Effluent	pH Specific Conductivity	Specific Conductivity pH Total Dissolved Solids Ion Balance	Sulfate Chloride Nitrate+nitrite (as N) Carbonate Bicarbonate Sodium Potassium Calcium Magnesium		Semi-annually January April July October