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**GROUND WATER QUALITY BUREAU (GWQB)
DISCHARGE PERMIT RENEWAL AND MODIFICATION
LAC MINERALS (USA) LLC – CUNNINGHAM HILL MINE RECLAMATION PROJECT
Issued under 20.6.2 NMAC**

Return Receipt Requested
Certified Mail No.

Mine Facility Name: Cunningham Hill Mine
GWQB Discharge Permit No: DP-55
GWQB TEMPO AI Number: 1486

Permittee Name/Responsible Party: LAC Minerals (USA) LLC
Mailing Address: 582 County Road #55
Cerrillos, NM 87010

County: Santa Fe County
Permitting Action: Renewal and Modification
Effective Date: DRAFT
Expiration Date: DRAFT

Mine Facility Contact: David Wykoff, (505) 252-9615
Mine Facility Location: 582 County Road #55
Cerrillos, NM 87010

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draft

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Part A GENERAL INFORMATION

A100 Introduction

- A. The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal and Modification, DP-55 (Discharge Permit) to LAC Minerals (USA) LLC (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 to-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC. NMED is issuing this Discharge Permit to control the discharge of water contaminants from the Cunningham Hill Mine for the protection of groundwater and those segments of surface water gaining from groundwater inflow, for present and potential future use as domestic and agricultural water supply and other uses, to abate groundwater contamination, and to protect public health.
- B. Pursuant to this Discharge Permit, the permittee is authorized to discharge leachate from the Cyanide Residue Pile, Waste Rock Stockpile, and other areas at the Cunningham Hill Mine, and operate four Class V Underground Injection Control (UIC) wells. In addition, the permittee is required to implement the approved abatement plan to abate groundwater contamination associated with past and current discharges from mine units at the Cunningham Hill Mine pursuant to this Discharge Permit. Discharges at the Cunningham Hill Mine may move directly or indirectly into groundwater of the State of New Mexico which has an existing concentration of 10,000 milligrams per liter (mg/L) or less total dissolved solids (TDS) within the meaning of Section 20.6.2.3104 and Subsection A of 20.6.2.3101 NMAC. These discharges may contain water contaminants or toxic pollutants elevated above the standards of Section 20.6.2.3103 NMAC in compliance with the terms and conditions of this Discharge Permit.
- C. The permittee is authorized to discharge water contaminants and is required to abate groundwater contamination pursuant to this Discharge Permit which requires compliance with 20.6.2 NMAC (WQCC Regulations) and is enforceable by NMED.

A101 Applicable Regulations

- A. The discharges from the facilities regulated pursuant to this Discharge Permit are not subject to any of the exemptions of Section 20.6.2.3105 NMAC.
- B. Groundwater quality as observed in monitoring wells required by C104 of this Discharge Permit is subject to the criteria of Sections 20.6.2.4101 and 20.6.2.4103 NMAC.

A102 Permit Duration

- A. Pursuant to NMSA 1978, § 74-6-5(l) and Subsection H of 20.6.2.3109 NMAC, the term of this Discharge Permit is **five (5) years** from its effective date.
- B. If the permittee submits an application for renewal in accordance with Subsection F of 20.6.2.3106 NMAC at least 120 days before the Discharge Permit expires, and the permittee

is not in violation of the Discharge Permit on the date of its expiration, then the existing Discharge Permit shall not expire until NMED approves, approves with conditions, or disapproves the application for renewal.

A103 Terms of Permit Issuance

- A. Permit Fees – The permittee shall remit a permit fee payment equal to the applicable permit fee listed in 20.6.2.3114 Table 1 NMAC at the time of Discharge Permit approval.
- B. Transfer of Discharge Permit – Prior to the transfer of any ownership, control, or possession of this permitted facility or any portion thereof, the permittee 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. The permittee 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.
- C. Permit Renewal – To renew this Discharge Permit and to meet the provisions found in Subsection F of 20.6.2.3106 NMAC, the permittee must submit an application and associated fees for renewal, or renewal and modification at least 120 days prior to the expiration date of this Discharge Permit.

Part B FACILITY SPECIFIC INFORMATION

B100 History and Facility Description

- A. The Cunningham Hill Mine operated as an open pit mine and heap-leach operation for gold recovery from 1979 to 1987. Ore was crushed and placed on an asphalt leach pad (Ore Treatment Unit) where it was leached with a dilute cyanide solution to extract recoverable gold. Following leaching, spent ore was rinsed with water, removed from the leach pad and placed in the Cyanide Residue Pile (Residue Pile). The majority of mine closure and surface reclamation tasks were completed by 1997. Groundwater monitoring, site maintenance, and abatement of groundwater and open pit pool water are ongoing activities at the mine site.
- B. The Cunningham Hill Mine occupies approximately 377 acres. The site includes an open pit, Waste Rock Pile, Dolores Gulch Capture System, Acid Rock Drainage (ARD) Treatment System ponds, Residue Pile, Residue Pile Plume Recovery System, Residue Pile Plume Remediation Ponds, former Ore Treatment Unit area, borrow areas, an office building, open pit pool water treatment facilities, Brine Evaporation Ponds, groundwater monitoring well network, pipelines, roads, and associated infrastructure. Figure 1 attached to this Discharge Permit shows major facilities at the Cunningham Hill Mine. Figure 2 attached to this Discharge Permit shows the groundwater monitoring and recovery well network. Discharges of leachate directly or indirectly into groundwater have occurred from the Residue Pile and the Waste Rock Pile resulting in impacted groundwater plumes.

- C. The Waste Rock Pile in Upper Dolores Gulch was created during operations between 1979 and 1987 and contains overburden removed from the Cunningham Hill Mine Open Pit. Reclamation of the Waste Rock Pile was completed in 1995, which primarily consisted of recontouring, placement of soil cover, and re-vegetation. A diversion channel was constructed on top of the reclaimed Waste Rock Pile to convey unimpacted stormwater through a synthetically lined channel into a natural tributary to Dolores Gulch downgradient of the impacted groundwater plume and recovery wells.
- D. The Residue Pile contains spent and rinsed ore that was leached with a cyanide solution that discharged to groundwater prior to reclamation. The Residue Pile was covered and revegetated in 1997. The Residue Pile-impacted groundwater plume is currently being remediated by pumping a series of recovery wells coupled with injection of water meeting groundwater standards to enhance plume recovery. The Residue Pile plume is located northeast of the Residue Pile.
- E. A concrete Interceptor Wall was installed in 1992 at the toe of the Waste Rock Pile in order to reduce the expansion of the impacted groundwater plume in Dolores Gulch. In 1993, a grouting program was initiated within the fractured portions of bedrock to control ARD flow around the Interceptor Wall. ARD discharged from the Waste Rock Pile is collected behind the Interceptor Wall in French drains and gravity fed to the ARD Treatment System. In July 1997, three recovery wells were installed down-gradient of the Interceptor Wall to collect groundwater within Dolores Gulch impacted by ARD. Impacted groundwater collected in the recovery wells is pumped to the ARD Treatment System. Previously ARD and impacted groundwater from Dolores Gulch was periodically treated by lime addition with lime sludge disposed of in excavated cells on top of the Waste Rock Pile. The current ARD Treatment System is a series of three double synthetically lined ARD collection and evaporation ponds. There are three unused synthetically lined ponds and discontinued lime treatment infrastructure that will be reclaimed in accordance with the approved closure plan.
- F. Until 2018, the permittee periodically utilized reverse-osmosis treatment and lime treatment for open pit pool water quality abatement. NMED approved nanofiltration to replace reverse-osmosis treatment for the open pit pool in 2018. The reverse-osmosis treatment system ponds were repaired and set up to accept brine reject from the nanofiltration treatment system via pipelines. Water quality impacts associated with the open pit pool are addressed under the Cunningham Hill Mine Reclamation Project Abatement Plan 27 (AP-27).
- G. In 2018, the permittee converted four existing groundwater monitoring wells into Class V UIC wells to inject Guest House Well water into groundwater outside the perimeter of the defined extent of the Residue Pile Plume to limit aquifer dewatering and increase recovery rates. A pilot UIC study in 2018 demonstrated no adverse impacts to groundwater quality from injection, hydrologic containment of the plume, and a significant increase in recovery well extraction rates. NMED granted temporary permission to continue UIC injection in 2019 and again in 2020, prior to issuance of this renewal and modification.

B101 Discharge Permit Modification

- A. The modification of DP-55 consists of authorization to operate of four Class V UIC wells to implement an injection-recovery system for remediation of the Residue Pile groundwater plume.

B102 Permitting History

- A. The Discharge Plan for DP-55 includes application materials submitted to NMED for renewal of DP-55 dated July 30, 2015 supplemented with a renewal and modification application dated July 9, 2019, and materials contained in the administrative record prior to issuance of this Discharge Permit. In addition, the Discharge Plan includes information and materials submitted as part of the original plan approved on June 21, 1979, renewed on October 4, 1985, April 26, 1993, September 27, 2002, March 2, 2011; and modified on November 20, 2017.

B103 Facility Location, Groundwater, and Characteristics of the Discharge

- A. The Cunningham Hill Mine is located on the northeast flank of the Ortiz Mountains approximately six miles south of the town of Cerrillos in Santa Fe County, New Mexico. The site is situated at 35.21 degrees North latitude and 106.07 degrees West longitude on an unsurveyed portion of Township 13 North, Range 8 East and an unsurveyed portion of Township 13 North, Range 7 East.
- B. Depth to groundwater beneath the mine units regulated pursuant to this Discharge Permit ranges from approximately 12 to 390 feet. Groundwater at the mine site had a pre-discharge TDS concentration ranging from approximately 300 to 1,601 mg/L.
- C. On October 5, 2005, NMED approved background concentrations for manganese, sulfate, and TDS for groundwater in Dolores Gulch. The approved background values apply to groundwater within the alluvial and shallow bedrock aquifers of Dolores Gulch, from the Interceptor Wall at the toe of the Waste Rock Pile to Dolores Spring.
- D. Discharges regulated pursuant to DP-55 exceed the water quality standards of Section 20.6.2.3103 NMAC for pH, cadmium, cobalt, cyanide, iron, manganese, nitrate, sulfate, and TDS.

B104 Authorized Mine Units

This Discharge Permit contains requirements associated with the following mine units at the Cunningham Hill Mine, as identified in the Discharge Plan.

- A. Waste Rock Pile – The reclaimed Waste Rock Pile covers 67 acres in Upper Dolores Gulch. The Waste Rock Pile generates ARD that discharges to the Interceptor Wall and to groundwater in Dolores Gulch. The ARD is characterized by low-pH, elevated sulfate and TDS, and dissolved metals in excess of the water quality standards of Section 20.6.2.3103 NMAC.

- B. Interceptor Wall – The Interceptor Wall consists of a concrete cutoff wall and associated French drain system constructed at the toe of the Waste Rock Pile across Dolores Gulch to capture ARD discharge which is then conveyed by gravity in a pipeline to the ARD Treatment System.
- C. Dolores Gulch Capture System – The Dolores Gulch Capture System consists of three recovery wells (RW97-01, RW97-02, and RW97-03) located downstream of the Interceptor Wall that pump impacted groundwater from Dolores Gulch to the ARD Treatment System.
- D. ARD Treatment System – The ARD Treatment System is located below the Waste Rock Pile and consists of a series of double synthetically lined ARD collection ponds, including ARD Collection Pond A, ARD Collection Pond B, and ARD Evaporation Treatment Pond, and associated pipelines.
- E. Residue Pile – The Residue Pile covers 53 acres in the Cunningham Creek area and has been reclaimed, revegetated, and released from financial assurance.
- F. Residue Pile Plume Recovery System - The Residue Pile Plume Recovery System includes seven recovery wells (RW85-01, RW85-02, RW87-03, RW87-04, RW96-05, RW96-06, RW96-07), located northeast of the Residue Pile. Up to four wells are permitted to be operated as Class V UIC wells for injection of Guest House Well water to aid remediation of the Residue Pile Plume. Currently wells MW87-12, MW95-47, and MW95-49 are being used for injection.
- G. Guest House Well – The Guest House Well is located north of the mine site and pumps water that typically meets the water quality standards of Section 20.6.2.3103 NMAC to a holding tank near the Residue Pile Plume Remediation Ponds from where it is injected by gravity flow into Class V UIC wells.
- H. Residue Pile Plume Remediation Ponds – The Residue Pile Plume Remediation Ponds consist of two synthetically lined evaporation ponds with leakage collection systems that receive impacted groundwater pumped from the Residue Pile Plume Recovery System. Water from the Residue Pile Plume Remediation Ponds may be discharged to the open pit pool.
- I. Former Ore Treatment Unit – The former Ore Treatment Unit area covers 39 acres and has been reclaimed, revegetated, and released from financial assurance.
- J. Borrow Areas – The Borrow Areas cover 115 acres and were the source of cover material for site reclamation and have been reclaimed and revegetated.
- K. Open Pit – The open pit covers 15 acres with a perimeter road to allow access to the open pit pool that formed after cessation of mining activities. Open pit pool water is being abated under the Cunningham Hill Mine Reclamation Project Abatement Plan 27 (AP-27) through the following water treatment system facilities:

1. Nanofiltration Treatment System – The system pumps open pit pool water through pipelines to the trailer-mounted nanofiltration treatment unit, conveys brine reject to the lined Brine Evaporation Ponds on top of the Waste Rock Pile, and returns treated water by gravity flow to back the open pit.
2. Brine Evaporation Ponds – The two synthetically lined Brine Evaporation Ponds (designated “RO” on Figure 1) are components of the open pit pool Nanofiltration Treatment System that receive discharges of nanofiltration brine reject for evaporation.

B105 Authorized Discharges

The permittee is authorized to discharge water contaminants from the following mine units in accordance with all applicable system design and operational constraints as described in this Discharge Permit and the Discharge Plan.

- A. The permittee is authorized to discharge a combined total of up to 30 acre-feet per year of impacted groundwater and ARD from the Interceptor Wall and the Dolores Gulch Capture System to the ARD Treatment System and impacted groundwater from the Residue Pile Plume Recovery System to the Residue Pile Plume Remediation Ponds or the open pit.
- B. The permittee is authorized to discharge water from the Guest House Well to a holding tank located near the Residue Pile Plume Remediation Ponds and then by gravity into four Class V UIC wells.
- C. The permittee is authorized to discharge water from the Guest House Well to the open pit pool.
- D. This Discharge Permit authorizes only those discharges specified herein. Any unauthorized discharges such as spills or leaks must be reported to NMED and remediated as required by Section 20.6.2.1203 NMAC, and any additional requirements listed in this Discharge Permit.

Part C FACILITY SPECIFIC REQUIREMENTS

The permittee shall conduct operations in accordance with the requirements set forth below to ensure compliance with 20.6.2 NMAC.

C100 Abatement of Groundwater Contamination

- A. The permittee shall abate groundwater contamination at the Cunningham Hill Mine as required in this Discharge Permit and described in the Discharge Plan. All existing impacted groundwater interceptor, extraction, and abatement systems shall continue to be operated until the permittee achieves compliance with Sections 20.6.2.4101 and 20.6.2.4103 NMAC. Any changes to these systems must be proposed to and approved by NMED prior to the change being implemented. NMED may require existing systems to be expanded or altered based on the results of ongoing groundwater monitoring or future investigations.

C101 Waste Rock Pile Interceptor Wall, Dolores Gulch Capture System, and ARD Treatment System

- A. The permittee shall abate groundwater pollution within Dolores Gulch until monitoring indicates that water quality standards have been achieved and maintained as set forth in Subsection D of 20.6.2.4103 NMAC, except as set forth in Subsection B of 20.6.2.4101 NMAC for the background dissolved concentrations approved in a letter from NMED to the permittee dated October 5, 2005 for the constituents listed below.
1. Manganese 1.03 mg/L
 2. Sulfate 1,061 mg/L
 3. TDS 1,601 mg/L
- B. The permittee shall maintain a minimum of two feet of freeboard in all ARD Treatment System ponds. If less than two feet of freeboard exists in either ARD Collection Pond A or ARD Collection Pond B the permittee shall lower the water levels in that pond by transferring water to the ARD Evaporation Treatment Pond. In the event capacity of the ARD Treatment System ponds are at or approaching capacity, excess impacted water may be transferred to the Brine Evaporation Ponds located on top of the Waste Rock Pile. NMED shall be notified within 24 hours of events resulting in transfer of water from the ARD Treatment System to the Brine Evaporation Ponds.
- C. Within 90 days of the effective date of this Discharge Permit (DATE), the permittee shall submit to NMED for approval a plan and implementation schedule to evaluate the condition of all pond liners authorized for use in this Discharge Permit. The evaluation plan shall consider liner competency, expected remaining lifespan, and solids handling to address sludge contained in any of the ponds, including solids contained in those ponds no longer intended for use as components of the ARD Treatment System.
- D. Within 30 days of the effective date of this Discharge Permit (DATE) the permittee shall submit for NMED approval a report that discusses potential sources of infiltration into the Waste Rock Pile that report to the Interceptor Wall and Dolores Gulch groundwater, including inputs from the east groin area. Following NMED approval of the report the permittee shall submit a corrective action plan and implementation schedule for modifications to the Waste Rock Pile cover and stormwater control systems to minimize discharge from the Waste Rock Pile to the Interceptor Wall and Dolores Gulch.
- E. Within 180 days of the effective date of this Discharge Permit (DATE) the permittee shall provide a comprehensive analysis of groundwater abatement activities within Dolores Gulch. The analysis shall include review of the progress made towards reducing the nature and extent of the impacted groundwater plume in Dolores Gulch, including at a minimum, geochemical and trend analysis of water quality and associated water level trends in extraction and monitoring wells. In addition, the analysis shall include a summary of all improvements and changes made to the Waste Rock Pile reclamation features, changes made to the Interceptor Wall system, changes in pumping rates, and the effectiveness of the

existing extraction well network. Based on results of the analysis, the permittee shall propose measures to address abatement of the remaining groundwater plume in Dolores Gulch.

C102 Residue Pile Plume Recovery System and Residue Pile Remediation Ponds

- A. The permittee shall abate groundwater pollution associated with the Residue Pile until monitoring indicates that water quality standards have been achieved and maintained as set forth in Subsection D of 20.6.2.4103 NMAC.
- B. Impacted groundwater pumped from the Residue Pile Plume Recovery System shall be transferred to the Residue Pile Plume Remediation Ponds for disposal by evaporation. The permittee may pump Residue Pile Plume Recovery System water to the open pit pool where it will enhance the buffering capacity of the pit pool water by increasing the alkalinity levels.
- C. The permittee shall maintain a minimum of two feet of freeboard in the Residue Pile Plume Remediation Ponds. If less than two feet of freeboard exists in the Residue Pile Plume Remediation Ponds the permittee shall lower the water levels in the ponds by transferring water to the open pit pool.
- D. The permittee shall operate the four UIC wells in accordance with the applicable requirements of 20.6.2.5000 through 20.6.2.5399 NMAC.
- E. The permittee shall maintain an injection rate no greater than four gallons per minute into each of the four Class V UIC wells to ensure the UIC wells can accept the injection.

C103 Sitewide Metering

- A. The permittee shall maintain standard dial flow meters that continuously measure and record the flow rates from the Interceptor Wall, the Dolores Gulch Capture System, the Residue Pile Plume Recovery wells, and injection to the UIC wells. Standard dial flow meters and auxiliary monitoring equipment shall undergo annual quality assurance to ensure that the equipment is operating properly.

C104 Monitoring and Reporting

- A. The permittee shall conduct the monitoring, reporting, and other requirements listed below. A summary of monitoring requirements, including type, frequency and number of samples, is attached to this Discharge Permit as Table 1.
- B. The permittee shall conduct monthly inspections of all structures, facilities, and equipment whose failure may impact water quality. Inspections and maintenance shall include but are not limited to remediation system ponds, pumps, and pipelines that convey impacted water.
- C. The permittee shall conduct the following Interceptor Wall, Dolores Gulch Capture System, ARD Treatment System, and Residue Pile Plume Recovery System monitoring.

1. The permittee shall analyze samples from recovery wells and ARD collection ponds as described in Table 1.
2. The permittee shall measure and record the static water levels of the ARD Treatment System ponds and the Residue Pile Plume Remediation Ponds on a monthly basis.
3. The permittee shall download and record data from the Interceptor Wall pressure transducer on a monthly basis.
4. The permittee shall read and record data from the Dolores Gulch Recovery Well totalizing meters on a monthly basis.
5. The permittee shall read and record data from the Residue Pile Plume Recovery Well totalizing meters on a monthly basis.
6. The permittee shall read and record the data from the UIC well totalizing meters on a monthly basis.
7. The permittee shall visually inspect all synthetically lined ponds and associated leakage collection systems on a monthly basis to ensure liner integrity and freeboard is being maintained.

Analytical results, water level measurements, flow rates, pumping volumes, and liner inspection results shall be reported as required in Conditions C104.K and C104.L.

- D. Groundwater Monitoring Wells: The permittee shall sample and analyze groundwater from the monitoring wells for dissolved concentrations of analytes as described in Table 1. Monitoring shall include recording the depth to water to the nearest hundredth of a foot (0.01 ft) in all monitoring wells. Monitoring well data shall be reported as required in Conditions C104.K and C104.L.
- E. Seeps and Springs: The permittee shall monitor water quality of all existing seeps and springs, including Dolores Seep, Dolores Spring, Deer Spring, and any other seeps or springs discovered for dissolved concentrations of analytes listed in Table 1. Active seep and spring locations shall be recorded on a map and the flow rates shall be measured, to the extent practicable, in gallons per minute from each seep and spring during each sampling event. Seep and spring locations, sample results, and flow rates shall be reported as required in Conditions C104.K and C104.L.
- F. The permittee shall prepare groundwater elevation contour map(s) on a semi-annual basis. The groundwater elevation contour map(s) shall be of an appropriate scale to show groundwater elevation contours for the Cunningham Hill Mine. The groundwater elevation contour maps shall include land surface topographic contours with appropriate contour intervals and marked locations of the monitoring wells that the depth to water data is based on. The maps shall be submitted as required in C104.K and C104.L.
- G. The permittee shall prepare hydrographs annually that include the last 10 years of data from each of the following monitoring wells:
 1. Dolores Gulch: PW77-1, MW96-65, MW92-30, MW93-37, MW93-38, MW92-28, MW95-52, MW96-62 and MW92-22

2. Residue Pile: MW92-33, MW84-5, MW91-21, MW95-47, MW95-50, and MW96-59

The hydrographs shall be reported as required in C104.L.

- H. Revegetation: To ensure that revegetation is protective of water quality, the permittee shall, at a minimum, perform monitoring of revegetated areas pursuant to schedules and monitoring requirements approved by the New Mexico Mining and Minerals Division (MMD). Any proposed changes to the revegetation monitoring plan to meet New Mexico Mining Act requirements shall be submitted to NMED for approval to ensure monitoring is protective of water quality. The permittee shall provide NMED with a copy of the most recent revegetation monitoring results submitted to MMD, including photographic documentation as required in C104.L.
- I. Erosion: The permittee shall visually inspect reclaimed lands and associated cover systems quarterly for signs of excessive erosion and shall mitigate significant erosion features to prevent further degradation of the site. Drainage channels, diversion structures, retention ponds, and auxiliary erosion control features shall be inspected in accordance with professionally recognized standards (e.g. Natural Resource Conservation Service Standards). The entire length of all diversion channels shall be inspected quarterly. Cover systems, drainage channels, diversion structures, retention ponds, and auxiliary erosion control features shall be inspected for evidence of erosion or other damage after storm events of one inch or greater in any 24-hour period. The permittee shall verbally report evidence of a major rill, gully, or sheet erosion on any reclaimed area within 24 hours of discovery. The permittee shall provide a written report within 30 days of the discovery describing the nature and extent of erosion and the steps taken or planned to be undertaken to repair the erosion. NMED may require the permittee to take additional actions to repair or otherwise mitigate the erosion. A summary of all erosion inspections shall be submitted as required in C104.L.
- J. Meteorological Data: The permittee shall conduct monitoring of site-specific meteorological conditions, including daily rain measurements and snowfall water content, air temperature, wind speed, and wind direction. A summary of daily meteorological data shall be reported as required in C104.K and C104.L.
- K. The permittee shall submit to NMED a semi-annual monitoring report by January 31 and July 31 of each year that contains the following information.
 1. A summary of monthly inspections, including pond liner and freeboard inspections, monitoring activities, and analytical results;
 2. A summary of Interceptor Wall, Dolores Gulch Capture System, ARD Treatment System, and Residue Pile Plume Recovery System operations, including monthly ARD flow from the Interceptor Wall, monthly volume of injection into each UIC well, monthly volume extracted from each recovery well, monthly average pond volumes, monthly volume of Residue Pile Plume water discharged to the Open Pit, and system inspections;
 3. Tables and figures showing sample locations and analytical results obtained from groundwater, seeps, and spring monitoring. Water quality data shall be presented in a

- single table in paper and electronic format (EXCEL spreadsheet) with constituents analyzed for and depth to groundwater levels measured during a single event shown in columns. Tabulated electrical conductivity will include the measured field values and corrected values to 25 degrees Celsius. Monitoring sites will be shown in rows with the name of the site in the left column. Each new sampling event shall be added as an additional row to the existing spreadsheet with the date noted in the second column next to the sample location name. Values exceeding standards will be bolded. Any constituent not analyzed for a particular sample location will be shown as "NA", any sample location not sampled will be shown as "NS" with an associated reason, and any sample location not measured for water levels will be shown as "NM" with an associated reason;
4. Groundwater elevation contour map(s);
 5. Monthly meteorological data;
 6. One electronic copy and one paper copy of the July 31 report shall be submitted. Lab results shall be included in the electronic report only.
- L. The permittee shall submit to NMED an annual report by January 31 of each year that includes the semi-annual information required in C104.K and the following.
1. A description of the overall condition of the Waste Rock Pile and the Residue Pile cover systems;
 2. A summary of all maintenance and repair work conducted;
 3. Results for revegetation and erosion monitoring;
 4. Monthly average ARD flow data for the last 10 years, in gallons per minute, collected from the Interceptor Wall;
 5. Hydrographs as described in C104.G;
 6. A statistical evaluation of water chemistry trends downgradient of the Waste Rock Pile and Residue Pile that include the last 10 years of data;
 7. Electronic copies of the signed laboratory analyses sheets; and
 8. One electronic and one paper copy of the January 31 report shall be submitted.
- M. Changes to monitoring and reporting requirements may require amendment or modification of this Discharge Permit as required by the Secretary.
- N. Following closure of a groundwater abatement system the permittee shall continue the approved groundwater monitoring program for a minimum of 30 years to ensure that there is no rebound in contaminant concentrations. The groundwater monitoring program may be reviewed at ten-year intervals to determine appropriate modifications to the monitoring program.

C105 Contingency Plan

- A. If monitoring associated with pond liner inspections indicates the integrity of a liner system is compromised, the permittee shall notify NMED verbally within 24 hours of the discovery. The permittee shall submit to NMED for approval within 7 days of discovery a corrective action plan and schedule for implementation to repair or replace the liner. Repairs or

replacement shall be conducted in accordance with the approved schedule. In the event an unauthorized discharge has occurred as a result of the liner failure the discharge shall be reported in accordance with D104.

- B. If the permittee discovers an increasing trend in the extent or magnitude of groundwater or surface water contamination, or an increase in discharge volume from any seep beyond what has been observed historically, or discovery of a new seep not previously noted, the permittee shall notify NMED within 5 days of discovery. A confirmation sample must be collected within 15 days of discovery of the increase. Within 60 days of confirmation of the increase in contamination, the permittee shall submit to NMED for approval a corrective action plan and implementation schedule to address the exceedance or new seep. Upon NMED approval of the corrective action plan, the permittee shall implement the approved corrective action plan in accordance with the implementation schedule. The permittee may be required to submit an abatement plan, including an implementation schedule to address source control and abatement of the contamination in accordance with 20.6.2.4101 to 20.6.2.4115 NMAC.
- C. If NMED or the permittee identifies any other failure of the discharge plan or system not specifically noted in this Discharge Permit that has the potential to impact water quality, NMED may require the permittee to develop and submit to NMED for approval a contingency plan and schedules to address the failure.
- D. If monitoring following shutdown of an interceptor or abatement system indicates that any groundwater standard is exceeded, the permittee shall submit to NMED for approval a corrective action plan and implementation schedule to address the exceedance. Upon NMED approval of the corrective action plan, the permittee shall implement the approved corrective action plan including any additional conditions required by NMED in accordance with the implementation schedule. The permittee may be required to submit an abatement plan, including an implementation schedule to address source control and abatement of the contamination in accordance with 20.6.2.4101 to 20.6.2.4115 NMAC.

C106 Closure

- A. The permittee shall implement the approved closure plan for each mine unit once it is no longer required as a component of the groundwater abatement systems.
- B. The permittee shall perform long-term monitoring until NMED determines that long-term monitoring is no longer required. The financial assurance described in C107 shall provide for a minimum of 100 years of long-term monitoring.
- C. Upon NMED approval that long-term monitoring is complete, the permittee shall submit a schedule for abandonment of all appropriate monitoring wells. All monitoring wells shall be abandoned pursuant to NMED Monitoring Well Construction and Abandonment Guidelines and according to the regulations issued by the New Mexico Office of the State Engineer in

19.27.7 NMAC, unless an alternative completion is approved by NMED and the New Mexico Office of the State Engineer.

C107 Financial Assurance

- A. The permittee shall maintain joint financial assurance with NMED and MMD to cover costs associated with reclamation of surface features at the Cunningham Hill Mine. The permittee shall maintain financial assurance with NMED to cover costs associated with groundwater abatement, long-term monitoring, maintenance, and corrective actions as required under this Discharge Permit.
- B. Within 90 days from the date of NMED approval of the proposed revised closure plan, the permittee shall submit to NMED for approval an updated financial assurance cost estimate and proposed financial assurance instrument. The updated financial assurance cost estimate shall include costs associated with the approved closure plan for surface features at the Cunningham Hill Mine, and a separate cost estimate associated with groundwater abatement activities and long-term monitoring for a period of 100 years. Financial assurance shall be provided to cover costs associated with the approved groundwater monitoring program for a period of 100 years. The proposed cost estimate for groundwater abatement shall include costs associated with implementation of abatement activities associated with AP-27.
- C. The permittee shall provide an updated closure plan and revised financial assurance cost estimate with the application for Discharge Permit renewal submitted in accordance with A103C.
- D. The financial assurance, including any revised financial assurance, shall meet the following requirements.
 - 1. The permittee shall retain financial assurance in the amount necessary to cover the cost of implementing the approved closure plan and the approved abatement plan cost estimate until released by NMED. Corporate guarantees or self-guarantees are not acceptable instruments for financial assurance held solely by NMED. If the instrument for financial assurance entails incremental costs of maintaining the instrument, i.e., costs for a trustee, the amount of the financial assurance shall be increased to include all such costs.
 - 2. NMED shall be named as the payee or beneficiary of the financial assurance instrument. The permittee may select a joint financial assurance instrument to meet complimentary requirements of both NMED and MMD. If a joint instrument is selected, both NMED and MMD must be named as payees or beneficiaries and the joint instrument must meet the requirements of both agencies.
 - 3. The permittee shall establish and maintain a trust to receive and disburse funds that may arise as the result of forfeiture of financial assurance that is held solely by NMED. The trust shall name NMED as the beneficiary. The trust agreement shall be in a form satisfactory to the State Board of Finance and shall be subject to approval by the Governor pursuant to NMSA 1978, §§ 46-4-1 to -9. The trust shall be maintained until all activities

- covered by the financial assurance have been successfully completed, NMED has released the financial assurance, and NMED has agreed to terminate this Discharge Permit. Upon forfeiture of financial assurance, the forfeited amount shall be deposited directly into the trust and shall be used for any activities or costs related to groundwater abatement and closure of the site.
4. The financial assurance instrument shall allow for adjustments due to inflation, new technologies, or NMED-approved revisions to the closure plan or abatement plan based on future investigations.
 5. The permittee shall provide at least 120 days written notice to NMED prior to cancellation, replacement, or non-renewal of a financial assurance instrument. The permittee shall obtain an NMED-approved alternate financial assurance mechanism within 90 days of such notice. If the permittee fails to obtain alternate financial assurance within 90 days, the current financial assurance shall become immediately payable to NMED.
 6. If the permittee refuses or is unable to conduct or complete the approved closure or abatement requirements, if NMED determines the terms of the Discharge Permit are not being met, or if NMED determines that the permittee defaults on the conditions under which the financial assurance was accepted, then the Secretary may proceed with forfeiture of all or part of the financial assurance. Prior to beginning a forfeiture proceeding, NMED shall provide a written notice to the permittee and shall include the reasons for the forfeiture and the amount to be forfeited. The amount shall be based on the total cost of achieving compliance with the Discharge Permit, including completion of abatement and closure. All financial assurance forfeited shall become immediately payable to NMED.
 7. The permittee may request a review by NMED of remaining closure measures and associated financial assurance once every twelve months. The request for closure review shall describe the closure measures completed and must contain a cost estimate for remaining closure measures.
 8. NMED may require updated financial assurance as a result of changes to site conditions that warrant changes to the closure plan or abatement plan authorized under this Discharge Permit. Should circumstances warrant adjustments to the approved financial assurance, NMED shall require them in writing and the permittee shall make the adjustment within 180 days.
 9. The financial assurance shall be released or modified when the NMED determines that abatement and closure measures covered by the financial assurance have been completed according to the requirements of the NMED-approved discharge plan, including the closure plan and the requirements of the New Mexico Water Quality Act and the WQCC regulations.

Part D GENERAL CONDITIONS

General conditions for Discharge Permits issued by the Ground Water Quality Bureau pursuant to 20.6.2 NMAC are listed below.

D100 Enforcement

- A. Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the permittee to a civil enforcement action pursuant to the WQA, NMSA 1978, § 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, modifying 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, NMSA 1978, Section 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, NMSA 1978, Section 74-6-5, 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. In any action to enforce this Discharge Permit, the permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. The permittee does not waive any argument as to the weight such evidence should be given. [NMSA 1978, § 74-6-10, § 74-6-10.1]
- B. Pursuant to NMSA 1978, Section 74-6-10.2(A-F), criminal penalties may be assessed for any person who knowingly violates or knowingly causes or allows another person to:
1. Make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA;
 2. Falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or
 3. Fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation.

D101 General Inspection and Entry Requirements

- A. 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, NMSA 1978, § 74-6-9(B) & (E)]
- B. The permittee shall allow the Secretary or an authorized representative, upon the presentation of credentials to [20.6.2.3107.D NMAC, NMSA 1978, § 74-6-9(B) & (E)]:
1. Enter at regular business hours or at other reasonable times upon the permittee's premises or other location where records must be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 2. Inspect and copy, during regular business hours or at other reasonable times, any records

required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.

3. Inspect, at regular business hours or at other 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.
4. Sample or monitor, at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the WQA, any effluent, water contaminant, or receiving water at any location before or after discharge.

D102 General Record Keeping and Reporting Requirements

- A. The permittee shall retain written records at the mine facility of all data and information on monitoring of groundwater, surface water, seepage, and meteorological conditions pursuant to this Discharge Permit, including the following:
 1. The dates, exact location and times of sampling or field measurements;
 2. The name and job title of the person who performed each sample collection or field measurement;
 3. The date of the analysis of each sample;
 4. The name and address of the laboratory and the name and title of the person that performed the analysis of each sample;
 5. The analytical technique or method used to analyze each sample or take each field measurement;
 6. The results of each analysis or field measurement, including the raw data;
 7. A description of the quality assurance and quality control procedures used.
- B. The permittee shall furnish to NMED, within a reasonable time, any documents or other information that NMED requests to determine whether cause exists for modifying, terminating and/or renewing this Discharge Permit or to determine compliance with this Discharge Permit. The permittee shall also furnish to NMED, upon request, copies of documents required to be kept by this Discharge Permit. [20.6.2.3107.D NMAC, NMSA 1978, § 74-6-9 (B) & (E)]

D103 General Sampling and Analytical Methods

- A. Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents.
 1. American Public Health Association, Standard Methods for the Examination of Water and

Wastewater (18th, 19th or current)

2. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste
3. U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey
4. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water
5. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition
6. Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations
7. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy
8. Surface water monitoring shall be conducted according to test procedures approved under Title 40 C.F.R. Part 136.

D104 Reporting Requirements for Unauthorized Discharges

- A. In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notification and corrective actions as required in 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and remove or mitigate any damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of Subsection A of 20.6.2.1203 NMAC. Within 7 days of discovering the discharge reportable under 20.6.2.1203 NMAC, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]
- B. As part of the 24-hour spill notification requirements, the permittee shall submit a figure to NMED that clearly displays the location (or locations) of the spill and identifies nearby mine units by the end of the next business day.

D105 Monitoring Well Abandonment

- A. The permittee shall submit a written request for NMED approval to amend or modify this Discharge Permit at least 30 days prior to the anticipated destruction or removal of any monitoring wells required by this Discharge Permit. After the permittee receives NMED approval, monitoring well plugging and abandonment shall be completed in accordance with the *Groundwater Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, or according to regulations issued by the Office of the State Engineer in 19.27.7 NMAC, unless an alternate method is approved by NMED. [20.6.2.3107 NMAC]

- B. The request required in D104.A shall include the following information:
1. A scaled map showing the location of the monitoring well(s) and the mine units it is intended to monitor;
 2. The purpose for plugging and abandoning the monitoring well(s);
 3. Details, if available, on the monitoring well(s), including depth-to-water elevation, top-of-casing elevation, construction and lithologic logs;
 4. Recent groundwater chemistry results from the monitoring well(s); and
 5. For any proposed replacement monitoring well(s), the same details of the proposed replacement well(s) as provided in D105.B.1, D105.B.3, and D105.B.4.

D106 Modifications and Amendments

- A. The permittee shall notify and obtain approval from NMED of a proposed change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility, prior to implementing such changes. Such changes may require modification or an amendment to this Discharge Permit. [20.6.2.3107(C) NMAC, 20.6.2.3109(E) NMAC]
- B. Pursuant to Subsection E of 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated, or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of groundwater quality and that more stringent requirements are needed to protect groundwater quality.

D107 Compliance with Other Laws

- A. Nothing in this Discharge Permit shall be construed in any way as relieving the permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders. [20.6.2 NMAC]

Table 1. Monitoring Schedule for Discharge Permit - 55 (DP-55) – Cunningham Hill Mine

Locations	Sampling Profile					Notes
	Type	Q1	Q2	Q3	Q4	
Residue Pile						
Guest House Well	gw		1		1	
MW84-04	mw					Dry since 1998
MW84-05	mw		1		1	
RW85-01	rw					Dry since 1997
RW85-02	rw		1		1	
RW87-03	rw					Dry since 2001
RW87-04	rw	1	1	1	1	
MW87-11	mw					Dry since 1997
MW87-12	mw		1		1	Dry since 2001
MW91-19	mw		1		1	
MW91-21	mw		1		1	
MW92-33	mw		1		1	
MW95-46	mw					Dry since 2002
MW95-47	mw	1	1	1	1	
MW95-48	rw	1	1	1	1	Functions as a recovery well.
MW95-49	mw	1	1	1	1	
MW95-50	mw					Dry since 2004
MW95-51	mw					Insufficient water column for sampling since Q3 2016
MW96-59	mw					Insufficient water column for sampling since 1997; dry since 2001
RW96-05	rw	1	1	1	1	
RW96-06	rw	1	1	1	1	
RW96-07	rw	1	1	1	1	
Waste Rock Pile						
MW92-22	mw		2		2	
MW92-23	mw					Dry since 2000
MW92-24	mw	2	2	2	2	
MW92-25	mw		2		2	
MW92-26	mw		2		2	
MW92-27	mw					Dry since 2000
MW92-28	mw	2	2	2	2	
MW92-29	mw	2	2	2	2	
MW92-30	mw					Dry since 2000
MW92-31	mw	2	2	2	2	
MW92-32	mw	2	2	2	2	
MW93-34	mw	2	2	2	2	
MW93-35	mw	2	2	2	2	
MW93-37	mw	2	2	2	2	
MW93-38	mw	2	2	2	2	
MW93-39	mw	2	2	2	2	
MW93-40	mw	2	2	2	2	
MW93-41	mw	2	2	2	2	
MW93-42	mw	2	2	2	2	
MW93-44	mw	2	2	2	2	
MW95-52	mw	2	2	2	2	
MW96-60	mw		*		*	Off-gradient well; *water level monitoring only

Locations	Sampling Profile					Notes
MW96-61	mw		*		*	Off-gradient well; *water level monitoring only
MW96-62	mw		2		2	
MW96-64	mw		2		2	
MW96-65	mw		2		2	
PW77-01	mw		2		2	
RW97-01	rw	2	2	2	2	
RW97-02	rw	2	2	2	2	
RW97-03	rw	2	2	2	2	
Surface Water						
ARD Collection Ponds	cp	2	2	2	2	
Dolores Seep	sp	2	2	2	2	
Dolores Spring	spg	2	2	2	2	
Deer Spring	spg		2		2	
<u>Type:</u> mw = monitoring well rw = recovery well gw = groundwater well spg = spring sp = seep cp = collection pond					<u>Sampling Quarter:</u> Q1 = Jan-Mar Q2 = Apr-Jun Q3 = Jul-Sep Q4 = Oct-Dec	
Profile 1 (dissolved concentrations) <u>Analyte Suite</u> Bicarbonate Calcium Copper Cobalt Cyanide (total) Cyanide (weak acid dissociable) Iron Manganese Nitrate as Nitrogen Sulfate Total Dissolved Solids <u>Field Parameters</u> pH Water Level/Depth Electrical Conductivity Temperature			Profile 2 (dissolved concentrations) <u>Analyte Suite</u> Aluminum Arsenic Bicarbonate Cadmium Calcium Chromium Iron Manganese pH (lab measured) Sulfate Total Acidity TDS <u>Field Parameters</u> pH Water Level/Depth Electrical Conductivity Temperature			

Figure 1. Facilities Map

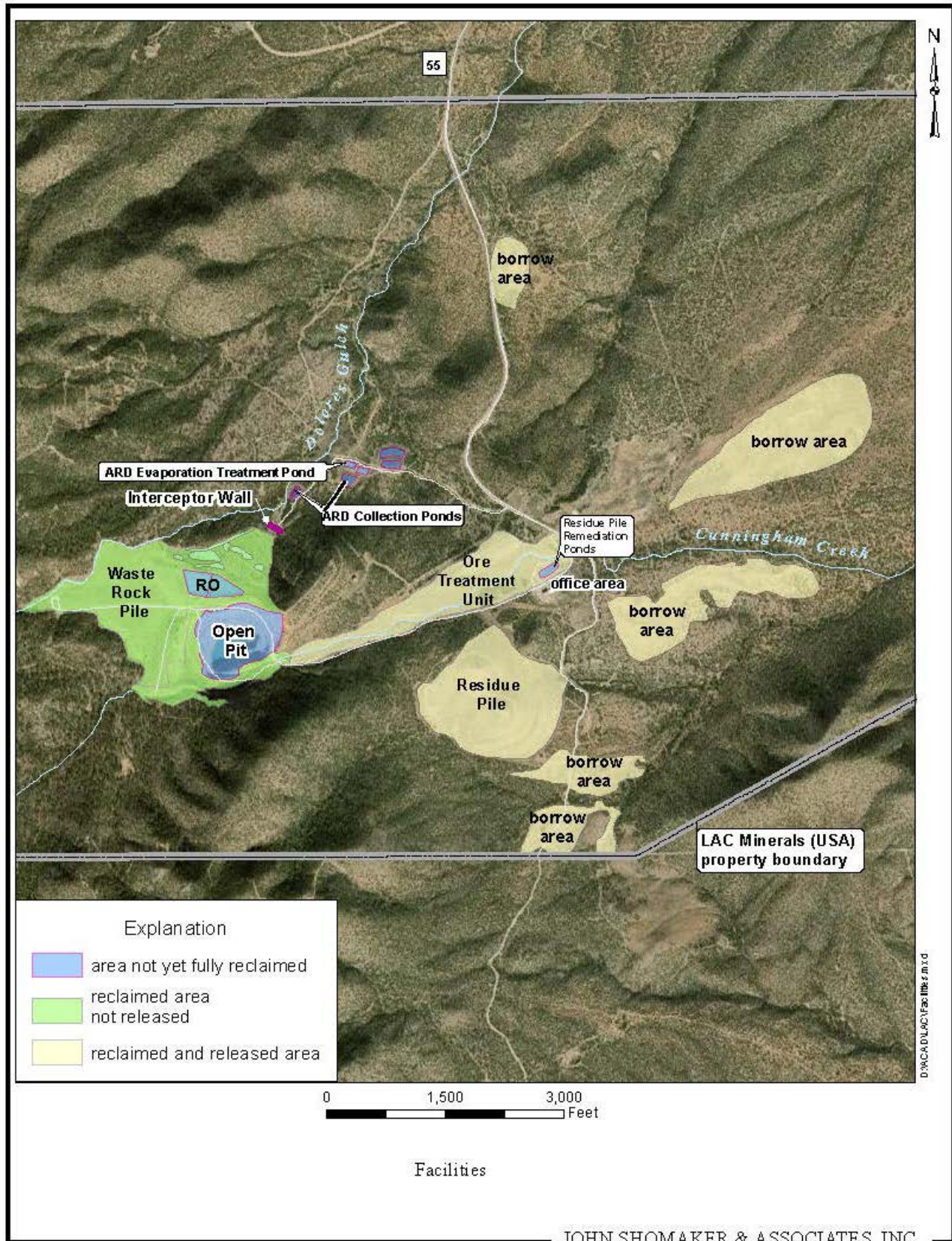


Figure 2. Groundwater Well Network Map

