

GROUND WATER DISCHARGE PERMIT RENEWAL
LAC Minerals, LLC
Cunningham Hill Mine Reclamation Project, DP-55
DRAFT: September 28, 2010

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal, DP-55, to LAC Minerals (USA) LLC (LAC) 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. The permit addresses the post-closure phase of the former gold mine and heap-leach facility at the Cunningham Hill Mine and associated ground water contaminant plumes.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the Cunningham Hill Mine facility into ground and surface water so as to protect water quality for present 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.

Site Location and Description

The Cunningham Hill Mine site 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. The site includes an open pit (15 acres), Waste Rock Pile (67 acres), Residue Pile (53 acres), Ore Treatment Unit area (39 acres), borrow areas (115 acres), an office building, evaporation ponds, water treatment facilities and ponds, brine ponds, and several roads. Reclamation activities have been initiated for the Waste Rock Pile and Residue Pile. Reclamation has been completed for the borrow areas.

The Cunningham Hill Mine operated from 1979 to 1987 and is presently owned by LAC Minerals (USA) LLC. An open pit mine and heap-leach operation were utilized for gold recovery at the Cunningham Hill Mine site. The ore was crushed and placed on an asphalt leach pad (Ore Treatment Unit) where it was leached with a dilute cyanide solution to extract the recoverable gold. Following leaching, the spent ore was rinsed with water, removed from the leach pad, and placed in the Residue Pile. Waste rock material mined from the open pit was placed on the Waste Rock Pile. The majority of closure and reclamation tasks were completed by 1997. Ground water monitoring, site maintenance, and water treatment are ongoing activities at the mine site.

Quantity, Quality, and Flow Characteristics of the Discharge

The regulated discharge includes leachate from the Residue Pile and Waste Rock Pile, the Acid Rock Drainage (ARD) Interceptor Wall and treatment facility, collection ponds, land application areas, and impacted storm water. Discharges of leachate directly or indirectly into ground water have occurred from the Residue Pile and the Waste Rock Pile. The Waste Rock Pile produces

ARD discharge in exceedence of health-based water quality standards (§20.6.2.3103.A NMAC) for cadmium and domestic water supply standards (§20.6.2.3103.B NMAC) for sulfate, pH, iron, manganese, and TDS. Leachate from the Residue Pile exceeds health-based water quality standards (§20.6.2.3103.A NMAC) for nitrate and cyanide; domestic water supply standards (§20.6.2.3103.B NMAC) for iron, manganese, sulfate, and TDS; and irrigation standards (§20.6.2.3103.C NMAC) for cobalt.

Discharge from the Waste Rock Pile consists of leachate that discharges to ground water in Dolores Gulch. ARD is being produced due to the exposure of waste rock containing sulfide minerals to air and water. A concrete Interceptor Wall was installed in 1992 at the toe of the Waste Rock Pile in order to reduce the migration of impacted ground water down Dolores Gulch. In 1993, a grouting program was initiated within the fractured portions of the bedrock to control ARD flow around the Interceptor Wall. Impacted water is currently being collected behind the wall in French drains and gravity-fed to Collection Pond A, one of two synthetically lined ARD collection ponds. In July 1997, three Recovery Wells, RW97-01, RW97-02, and RW97-03, were installed down-gradient of the Interceptor Wall to collect any additional impacted water within Dolores Gulch that had moved beyond the Interceptor Wall. Impacted water collected in the Recovery Wells is pumped to the lined ARD Collection Pond A. When necessary, ARD can be transferred to the lined ARD Collection Pond B. Water in the ARD collection ponds is transferred to the two lined ARD treatment cells where it is treated with a slaked lime solution to precipitate metals and raise pH. The treated water gravity flows from the treatment cells to two lined evaporation ponds. The sludge generated in the treatment cells is placed on top of the Waste Rock Pile by excavating a portion of the top surface of the Waste Rock Pile, incorporating the sludge, and covering the excavation. From 2005-2009, the average combined flow to the ARD collection ponds from the Interceptor Wall and the Recovery Wells was approximately 2,866 gallons per day, or 1.99 gallons per minute (gpm). This flow rate is variable depending on seasonality and precipitation events.

Discharge from the Residue Pile consists of a cyanide-nitrate rich leachate that has discharged to ground water in the Cunningham Gulch area. The cyanide-nitrate ground water plume is currently being remediated by pumping a series of Recovery Wells located in the drainage northeast of the Residue Pile. Impacted ground water is pumped into a synthetically lined treatment pond and treated using passive evaporation and selective land application to specified areas on the mine property to allow for rapid evaporation.

The Waste Rock Pile and the Residue Pile were covered and revegetated in 1992 and 1997, respectively.

Water quality impacts associated with the open pit are addressed under the Cunningham Hill Mine Reclamation Project Abatement Plan 27 (AP-27).

Characteristics of Ground Water

Site-wide, the depth to ground water ranges from approximately 12 to 390 feet. The current open pit pool depth is approximately 105 feet.

On October 5, 2005, NMED approved ground water background concentrations for Dolores Gulch for manganese (1.03 mg/L), sulfate (1,061 mg/L), and TDS (1,601 mg/L). The applicability of the approved background values applies to ground water within the alluvial and shallow bedrock aquifers of Dolores Gulch between the Waste Rock Pile and Dolores Spring.

General

The Cunningham Hill Mine facility Discharge Plan consists of the materials submitted by LAC dated May 25, 2007. In addition, the Discharge Plan includes information and materials submitted as part of the original discharge permit approved on June 21, 1979 and renewed on October 4, 1985, April 26, 1993, and September 27, 2002.

The discharge shall be managed in accordance with the approved permit requirements and is subject to the conditions listed in Section III of this Discharge Permit. However, issuance of this Discharge Permit does not relieve LAC of its responsibility to comply with 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 closure 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. Effluent or leachate from the facility may move directly or indirectly into ground water within the meaning of 20.6.2.3104 NMAC.
2. Effluent or leachate from the Cunningham Hill Mine facility 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 may move into ground water of the State of New Mexico.
3. The discharge from the Cunningham Hill Mine facility is not subject to any of the exemptions of 20.6.2.3105 NMAC.
4. LAC is required to abate ground water contamination pursuant to 20.6.2.3107.A(11) and 3109.E(1) NMAC because the discharges of effluent or leachate from the Cunningham Hill Mine facility have contaminated groundwater (of the State of New Mexico which has an existing concentration of 10,000 mg/l or less of TDS and which is at a place of withdrawal

for present or reasonably foreseeable future use) above the standards and requirements in 20.6.2.3103 NMAC and Water Quality Standards for Interstate and Intrastate Streams in New Mexico have been and may be violated in surface water due to discharges.

III. PERMIT CONDITIONS

The following conditions shall be complied with by LAC and are enforceable by NMED.

ABATEMENT OF GROUND WATER CONTAMINATION

1. LAC shall abate ground water contamination at the Cunningham Hill Mine site as described in Conditions 2 through 6 for the Waste Rock Pile and Conditions 7 through 9 for the Residue Pile. All existing ground water contamination interceptor and abatement systems must continue to be operated during post-closure activities. These systems must be operated until LAC achieves compliance with the performance standards in this discharge permit and the monitoring indicates that ground water standards have been achieved and maintained for eight consecutive quarters. Any substantial changes to these systems must be proposed to and approved by NMED prior to the change being implemented. NMED may require these systems to be expanded based on the results of ongoing ground water monitoring or future investigations. [20.6.2.3107.A(11) NMAC] [20.6.23109.E(1) NMAC]

Dolores Gulch ARD Remediation, Treatment, and Sludge Disposal

2. LAC shall abate ground water within Dolores Gulch to WQCC ground water quality standards or to NMED approved background concentrations (dissolved) as approved in a letter from NMED to LAC dated October 5, 2005.
 - a. Aluminum 5.0 mg/l (WQCC ground water standard)
 - b. Cadmium 0.01 mg/l (WQCC ground water standard)
 - c. Iron 1.0 mg/l (WQCC ground water standard)
 - d. Manganese 1.03 mg/L (NMED approved background)
 - e. Sulfate 1,061 mg/L (NMED approved background)
 - f. TDS 1,601 mg/L (NMED approved background)
 - g. pH 6 to 9 (WQCC ground water standard)

These remediation goals shall be attained at each monitoring well for eight consecutive quarters, unless LAC can successfully demonstrate technical infeasibility as described in Section 3, Condition 11 of the Stipulation for DP-55, dated September 12, 1994. [20.6.2.3103 NMAC]

3. LAC shall discharge water pumped from the Dolores Gulch ARD Recovery Wells into either of the two synthetically lined ARD collection ponds, Collection Pond A or Collection Pond B. ARD shall then be transferred to two treatment cells where it is treated with a lime solution. The treated water shall be transferred to two evaporation ponds. [20.6.2.3106.C NMAC]

DRAFT

4. LAC shall remove ARD sludge from the treatment cells in a manner which does not compromise the integrity of the synthetic liners. Sludge disposal shall be consistent with the approved *ARD Treatment Sludge Management Plan* dated January 7, 2003. LAC shall notify NMED of all sludge removal events a minimum of seven days prior to the removal event. The notification shall include the estimated amount of sludge to be removed, the proposed date of removal/disposal, and the proposed method and location of disposal. [20.6.2.3106.C NMAC]
5. LAC shall maintain a minimum of one foot of freeboard in all ARD collection, treatment, and evaporation ponds. If less than one foot of freeboard exists in any pond, LAC shall lower the water levels in that pond. Excess untreated ARD shall be pumped to the Reverse Osmosis (RO) brine ponds located on top of the Waste Rock Pile for temporary storage. Excess treated ARD shall be pumped to the permitted land application areas as described in Condition 9. The RO ponds and land application areas shall receive untreated and treated ARD only on an emergency basis, such as during periods of high precipitation, to avoid overflows or spills at the ARD collection, treatment, and evaporation ponds. NMED shall be notified within 24 hours of emergency events resulting in temporary storage of untreated ARD in RO ponds or discharge of treated ARD to the land application areas. Emergency discharges shall not exceed a period of 14 days. [20.6.2.3106.C NMAC]
6. LAC may implement a lime milk remediation treatment or alternative treatment for low pH ground water within Dolores Gulch. LAC must submit a treatment proposal for NMED approval a minimum of 60 days prior to initiation. [20.6.2.3106.C NMAC]

Residue Pile Cyanide/Nitrate Plume Remediation and Treatment

7. LAC shall abate contaminated ground water impacted by the Residue Pile to WQCC ground water quality standards. Abatement shall continue until monitoring indicates that ground water standards have been achieved and maintained for eight consecutive quarters. [20.6.2.4103.E NMAC]
8. LAC shall extract contaminated ground water from the cyanide-nitrate plume at a pumping rate not to exceed 80 acre-feet per year. [20.6.2.3109 NMAC]
9. LAC shall land-apply water pumped from the cyanide/nitrate plume in such a manner and rate as to effectively evaporate the water and prevent surface runoff from the land application areas. The areas currently approved for land application include approximately 8.9 acres located adjacent to the northeast toe of the Residue Pile, 9.2 acres located approximately 4,000 feet northeast of the Residue Pile, and 3 acres located adjacent to the cyanide/nitrate collection ponds. The discharge shall utilize a sprinkler system to enhance evaporation. [20.6.2.3109 NMAC]

General

10. LAC shall perform maintenance on all reclaimed areas covered under this Discharge Permit, including the Waste Rock Pile cover, the Residue Pile cover, revegetation, and any associated drainage and diversion structures as necessary to ensure integrity of the covers and

protection of water quality. Based on monitoring of revegetation and erosion described in Conditions 21 and 22, LAC shall provide a summary of all maintenance and repair work conducted and recommendations for additional future maintenance work in the annual monitoring reports, including a schedule for completion of the work. [20.6.2.3107 NMAC]

11. LAC shall routinely inspect and maintain all structures, facilities, supplies, and equipment whose failure may impact ground water. Inspections and maintenance shall include but are not limited to 1) remediation system ponds; 2) all water treatment and remediation system facilities; 3) pumps and pipelines to convey contaminated and treated water; and 4) drainage diversion structures. Ground and surface water that exceeds the applicable water quality standards shall be handled and stored in a manner that is consistent with applicable regulatory requirements. [20.6.2.3107 NMAC]

MONITORING AND REPORTING

12. LAC shall perform post-closure monitoring until NMED determines that post-closure monitoring is no longer required. The financial assurance described in Conditions 43 through 45 shall provide for a minimum of 100 years of post-closure monitoring. NMED may amend the monitoring frequency, duration, locations, and analytical parameters or other measurements set forth in specific post-closure monitoring Conditions 13 through 27 for good cause shown in a written request. Any request from LAC for monitoring and reporting reductions shall include a justification for the monitoring reduction and a map showing the selected well locations. [20.6.2.3109 NMAC]
13. Upon NMED approval that post-closure monitoring is complete, LAC 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 Office of the State Engineer in 19.27.7 NMAC, unless an alternative completion is approved by NMED. [20.6.2.3109 NMAC]
14. Upon notification from NMED that a contamination interceptor or abatement system can be shut down in accordance with Conditions 2 and 7, LAC shall continue the approved monitoring program for a minimum of 30 years or the remainder of the post closure monitoring period, whichever is longer, to ensure that there is no rebound in contaminant concentrations. If monitoring indicates that any ground water standard is exceeded after shut down of the contamination interceptor or abatement system, system operation shall resume in accordance with Condition 1, unless an alternative remediation approach is proposed at that time and approved by NMED. [20.6.2.3109 NMAC]
15. LAC shall conduct the monitoring, reporting, and other requirements listed below. A summary of monitoring requirements is attached to this Permit as Table 1. [20.6.2.3107A NMAC]

Sampling and Field Measurements

16. ARD Remediation System: LAC shall conduct the following ARD remediation and treatment

system monitoring. [20.6.2.3107 NMAC]

- a. LAC shall analyze samples from the ARD system and recovery wells as described in Table 1.
- b. LAC shall measure and record the static water levels of the ARD collection, treatment, and evaporation ponds on a weekly basis.
- c. LAC shall maintain automated monitoring equipment that continuously measures and records the flow rates of ARD discharging to the collection pond. This equipment shall undergo regular quality assurance and data shall be downloaded every 14 days to ensure that equipment is operating properly.
- d. LAC shall measure and record the volume of impacted ground water pumped from the Dolores Gulch Recovery Wells on a weekly basis.
- e. LAC shall record the days of operation and the volume of ARD treated in the lime treatment system.
- f. Analytical results, water level measurements, flow rates, and pumping volumes shall be reported as required in Conditions 28 and 29.

17. Residue Pile Remediation System: LAC shall conduct the following Residue Pile remediation system monitoring. [20.6.2.3107 NMAC]

- a. LAC shall measure and record the amount of water land applied on a monthly basis and submit the data to NMED with the quarterly monitoring reports as described in Condition 28.
- b. LAC shall sample the water in the land application holding pond on a quarterly basis. Samples will be analyzed for field parameters (pH, conductivity, and temperature) and the analytes listed in Table 1. Results will be reported to NMED as part of the quarterly/annual monitoring reports as described in Conditions 28 and 29.

18. Ground Water Monitoring Wells: LAC shall conduct post-closure monitoring of ground water monitoring wells for dissolved concentrations of analytes based on the monitoring schedule included in Table 1. Monitoring shall include recording the depth to water to the nearest hundredth of a foot (0.01 ft) in on-site monitoring wells. Monitoring well data shall be reported as required in Conditions 28 and 29. [20.6.2.3107 NMAC]

19. Seeps and Springs: LAC shall monitor the water quality of all existing seeps and springs including Dolores Seep, Dolores Spring, Deer Spring, and any other seeps discovered during post-closure for dissolved concentrations of analytes as described 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 28 and 29. [20.6.2.3107 NMAC]

20. Surface Water: LAC shall maintain a surface water sampling plan in accordance with USEPA NPDES permit number NM0028711 for post-closure monitoring of surface water quality in Dolores Gulch and Cunningham Gulch. Sample results shall be reported to NMED with the quarterly monitoring reports described in Conditions 28 and 29. [20.6.2.3107

NMAC]

21. **Revegetation:** To ensure that revegetation is protective of water quality, LAC shall, at a minimum, perform post-closure monitoring of revegetated areas pursuant to schedules and monitoring requirements approved by the NM Mining and Minerals Division (MMD). Any proposed changes to the post-closure revegetation monitoring plan to meet NMMA requirements shall be submitted to NMED to ensure monitoring is protective of water quality. LAC shall provide NMED with a copy of the most recent revegetation monitoring results submitted to MMD, including photographic documentation. [20.6.2.3107 NMAC]
22. **Erosion:** LAC shall visually inspect reclaimed lands annually 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 and 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. LAC shall verbally report evidence of a major rill, gully, or sheet erosion on any reclaimed area within 24 hours of discovery. LAC 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 LAC to take additional actions to repair or otherwise mitigate the erosion. [20.6.2.3107 NMAC]
23. **Meteorological Data:** LAC shall conduct post-closure monitoring of site-specific meteorological conditions including rain and snow measurements, air temperature, wind speed, and wind direction. A summary of daily meteorological data shall be reported annually. [20.6.2.3107 NMAC]

Analysis

24. Residue Pile monitoring wells shall be sampled and analyzed for the parameters in Profile 1 as listed below. [20.6.2.3107 NMAC]
 - a. Field Parameters: pH, electrical conductivity, temperature, water level/depth;
 - b. Analytes: bicarbonate, calcium, cobalt, copper, cyanide (total), cyanide (weak acid dissociable), iron, manganese, nitrate as nitrogen, sulfate, and total dissolved solids.
25. Waste Rock Pile monitoring wells, ARD from the Interceptor Wall, and seeps and springs shall be sampled and analyzed for the parameters in Profile 2 as listed below. [20.6.2.3107 NMAC]
 - a. Field Parameters: pH, electrical conductivity, temperature, water level/depth;
 - b. Analytes: aluminum, arsenic, bicarbonate, cadmium, calcium, chromium, iron, manganese, pH (lab measured), sulfate, total acidity, and total dissolved solids.
26. The Land Application Pond shall be monitored as listed below and reported as described in Condition 28. [20.6.2.3107 NMAC]

- a. Field parameters to be measured quarterly include pH, electrical conductivity, and temperature;
- b. Analytes to be measured quarterly include cyanide (total), cyanide (weak acid dissociable), and nitrate as nitrogen;
- c. Freeboard shall be measured weekly.

Methodology

27. Unless otherwise approved in writing by NMED, LAC shall conduct sampling and analysis in accordance with the most recent edition of the following documents. [20.6.2.3107 NMAC]
- a. American Public Health Association, *Standard Methods for the Examination of Water and Wastewater*.
 - b. U.S. Environmental Protection Agency, *Standard Methods for Chemical Analysis of Water and Wastewater*.
 - 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 of Federal Regulations Part 136.

Reporting

28. LAC shall submit to NMED quarterly monitoring reports by January 31, April 30, July 31, and October 31 of each year that contain, at a minimum, the following information. [20.6.2.3107 NMAC]
- a. A summary of monitoring activities and analytical results;
 - b. Monthly precipitation data;
 - c. A summary of Residue Pile pumping and land application operations, including collection pond levels, gallons pumped, gallons land-applied, and system inspections;
 - d. A summary of ARD collection and treatment system operations, including collection pond levels, flow readings from the Interceptor Wall and all Recovery Wells, and ARD lime treatment and system inspections;
 - e. Tables and figures showing the sample locations and the analytical results obtained. Water quality data shall be presented in a single table in a paper and electronic format (EXCEL spreadsheet) with those constituents analyzed and water 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 site name. Values exceeding standards will be bolded. Any constituent not analyzed for a particular site will be shown as "NA", any site not sampled

DRAFT

- 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;
- f. A table showing water level data for all applicable monitoring wells;
 - g. One electronic and one paper copy of the April 30, July 31, and October 31 (first, second, and third quarter) reports shall be submitted.
 - h. Electronic copies of the signed laboratory analyses sheets shall be provided each quarter.
29. LAC shall submit to NMED an annual report by January 31 of each year in combination with the January 31 quarterly report. [20.6.2.3107 NMAC]
- a. The annual report shall contain a yearly summary of all the above information and a description of any closure or post-closure work completed during the preceding year at the Cunningham Hill Mine site. This requirement includes, but is not limited to
 1. A description of the overall condition of the Waste Rock Pile and the Residue Pile;
 2. Any maintenance and repair work conducted;
 3. Post-closure monitoring results for revegetation and erosion;
 4. A summary of ground water and surface water quality monitoring results for the year;
 5. A potentiometric surface map;
 6. Hydrographs as described in Condition 29.b;
 7. A summary of water treatment and sludge handling;
 8. One electronic and one paper copy of the January 31 annual report shall be submitted.
 - b. LAC shall prepare hydrographs 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
 - c. LAC shall complete a statistical evaluation of water chemistry trends downgradient of the Waste Rock Pile and Residue Pile as required in accordance with Performance Standards WRD-1, Condition 3 and RP-1, Condition B as outlined in the *Cunningham Hill Mine Reclamation Project-Final Contingency Plan* dated January 25, 1996.
30. By July 31, 2011, LAC shall submit for NMED approval a report evaluating the performance of the Waste Rock Pile cover system in limiting infiltration into the Waste Rock Pile. This report must at a minimum provide all raw data and present a hydrological analysis documenting the relationships between precipitation, runoff, changes in water storage, net-percolation, and the volume and timing of ARD flow at the Interceptor Wall. The report shall also include a proposal for any necessary changes to the cover system to ensure ground water protection. [20.6.2.3107 NMAC]

Closure of Remediation System Components

31. Once NMED has determined that ground water interceptor and abatement systems have met

DRAFT

the abatement requirements of 20.6.2.4112 NMAC, all components of the remediation system shall be closed. This includes the ARD treatment cells, all collection ponds and evaporation ponds, all associated piping, and all monitoring and recovery wells. [20.6.2.4112 NMAC]

- a. Closure of all ponds shall be initiated by evaporating all solutions within the ponds and cells. The remaining pond sludge and residue shall be analyzed by TCLP and, if necessary, disposed of off-site at an approved facility.
- b. The lime treatment apparatus shall be dismantled and disposed of properly. Pond liners shall be washed, folded over, and buried in place with a minimum of 3 feet of approved cover. The areas shall be recontoured to provide positive drainage and revegetated by broadcast seeding.

CONTINGENCY PLAN

32. In the event of a spill or release that is not authorized under this Discharge Permit, LAC shall initiate the notifications and corrective actions as required in 20.6.2.1203 NMAC. LAC 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, LAC shall verbally notify NMED and provide the information required by 20.6.2.1203.A.1 NMAC. Within 7 days of discovering the discharge, LAC shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. LAC shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]
33. In the event that any required monitoring well must be replaced, LAC shall submit a plan and schedule to NMED for approval at least 60 days prior to abandonment and replacement. All monitoring wells shall be constructed and abandoned pursuant to the NMED Monitoring Well Construction and Abandonment Guidelines unless an alternative completion is approved. [20.6.2.5102 NMAC]
34. If LAC discovers a significant increase in the extent or magnitude of ground or surface water contamination, or a significant increase in discharge volume from any seep or existing discharge point, LAC shall notify NMED within 5 days of discovery of the increase. A confirmation sample must be collected within 15 days of discovery or notification of the increase. Within 60 days of confirmation of the increase in contamination, LAC shall submit to NMED for approval 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. Upon NMED approval, LAC shall implement the approved abatement plan in accordance with the included implementation schedule. [20.6.2.4101 to 20.6.2.4115 NMAC]
35. Failure of any component of site closure shall be addressed in accordance with the *Cunningham Hill Mine Reclamation Project, Final Contingency Plan*, January 25, 1996. Failures include but are not limited to failure of covers or revegetation, failure of surface run-on and run-off controls, or failures in slope stability that may result in an exceedence of water quality standards or otherwise threaten public health or the environment. [20.6.2.4106 NMAC]

36. Pursuant to 20.6.2.3107.A.10 NMAC, if NMED or LAC identifies any other failure of this Discharge Permit or system not specifically noted above, NMED may require LAC to develop and submit to NMED for approval contingency plans and schedules to cope with the failures. [20.6.2.3107.A.10 NMAC]

Dolores Gulch Specific Contingencies

37. LAC shall enact contingency measures as defined in the *Cunningham Hill Mine Reclamation Project, Final Contingency Plan*, January 25, 1996, if any of the following conditions occur:
- a. The pH of a water sample, measured at the well head within 15 minutes of sampling, from two or more monitoring wells in Dolores Gulch, taken during two consecutive sampling events from the same wells, decreases by more than 1.0 unit from the median of the previous five measurements.
 - b. The acidity increases in two or more ground water monitoring wells in Dolores Gulch for any two consecutive sampling events by more than 30 percent (and greater than 250 mg/l as CaCO₃) from the median of the previous five measurements.
 - c. The overall trend from the 8 most recent quarterly sampling events fails to show a progression toward meeting the remediation goals in the majority of ground water monitoring wells for at least two of the following three constituents: sulfate, TDS, and acidity.

In the event that one of the three conditions should occur, LAC will enact Contingency Plan WRD-1. This plan includes notification of NMED within two days, resampling of all monitoring wells for confirmation, additional analysis and site investigation, and development of a revised remediation plan. This revised remediation plan will be submitted for NMED approval within 6 months of determination that one or more of the three conditions listed has occurred. [20.6.2.3107 NMAC]

38. Periods of unusually high flow from the Interceptor Wall and the Dolores Gulch Recovery Wells shall be monitored closely to prevent an inundation of the ARD treatment system. If the average ARD flow rate exceeds 15 gpm for five consecutive days, LAC shall notify NMED immediately. [20.6.2.3107 NMAC]
39. In the event that the average annual ARD flow is greater than operational measures can accommodate, operational contingencies shall be enacted. The contingencies may include the installation of one or more of the following: additional ARD treatment cells, a secondary water treatment process, additional evaporation ponds, or spray or drip systems within the ponds to enhance evaporation. [20.6.2.3107 NMAC]
40. In the event that changes in pond volumes cannot be accounted for by pumped inflow, outflow, or evaporation, LAC shall conduct a formal inspection to determine if pond leakage is occurring. If leakage is identified, NMED shall be notified within two days of identification, water levels will be reduced to a minimum working level, and the necessary

repairs will be made. Within 30 days of the discovery of leakage, LAC shall submit a report which describes the amount and composition of the solution discharged, description of the repairs made, proposed actions to monitor and/or mitigate any contamination caused by the leakage, and a plan to prevent future similar leakage. [20.6.2.3107 NMAC]

Residue Pile Specific Contingencies

41. LAC shall enact Contingency Plan RP-1, dated March 19, 1997, in the event that either of the following conditions occurs. [20.6.2.3107 NMAC]
 - a. The total cyanide or nitrate as nitrogen concentrations in water samples from two or more ground water monitoring wells downgradient of the Residue Pile, taken during two consecutive sampling events, increases by more than 30% from the median of the previous five measurements (and total cyanide increases by at least 0.1 mg/l or nitrate-nitrogen increases by at least 3 mg/l).
 - b. The overall trend since institution of remediation does not show a progression towards meeting the remediation levels for cyanide and nitrate-nitrogen in the majority of the ground water monitor wells. The trend shall be determined using a 95% probability level.
42. Contingency Plan RP-1 includes notification of NMED within two days, resampling of affected monitoring wells for confirmation of water quality, additional analysis and site investigation, and development of a revised remediation plan. This plan shall be submitted for NMED approval within six months of determination that either of the conditions listed in Condition 41 has occurred. [20.6.2.3107 NMAC]

FINANCIAL ASSURANCE

43. LAC shall maintain the existing joint financial assurance with NMED and MMD in the amount of \$387,000 and financial assurance with NMED in the amount of \$4,815,333 in current dollars to cover costs associated with post-closure monitoring, maintenance, and corrective actions as required under this Discharge Permit. This amount is based on the calculations completed as part of the Financial Assurance cost estimate approved by NMED, dated September 27, 2002. [20.6.2.3107A(11) NMAC]
44. Within 6 months from the date of the issuance of this Discharge Permit, LAC shall submit to NMED for approval updated financial assurance instruments and an updated financial assurance cost estimate. [20.6.2.3107 NMAC]
45. The financial assurance, including any revised financial assurance, shall meet the following standard requirements. [20.6.2.3107A(11) NMAC]
 - a. LAC shall retain a financial assurance instrument throughout the term of the Discharge Permit until released by NMED. The financial assurance shall remain in place during lapses in Discharge Permit coverage, including late Discharge Permit renewal.
 - b. NMED shall be named as the payee or beneficiary of the financial assurance instrument. LAC may select a joint financial assurance instrument to meet the requirements of both NMED and MMD. If a joint instrument is selected, both NMED and MMD must be

DRAFT

- named as payees or beneficiaries and the joint instrument must meet the requirements of both agencies.
- c. The financial assurance instrument shall allow for adjustments due to inflation, new technologies, or NMED-approved revisions to the closure plan based on continued investigations.
 - d. The financial assurance shall be evaluated, compared, and if necessary, revised to comply with WQCC financial assurance regulations, if and when such regulations are promulgated and become effective and from time to time as the regulations allow.
 - e. LAC shall provide at least 120 days written notice to NMED prior to cancellation or non-renewal of the financial assurance. LAC shall obtain an NMED-approved alternate financial assurance mechanism within 90 days of such notice. If LAC fails to obtain alternate financial assurance within 90 days, the current financial assurance shall become immediately payable to NMED.
 - f. If LAC refuses or is unable to conduct or complete the closure requirements of this approval, if NMED determines the terms of the permit are not met, or if NMED determines that LAC 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 LAC 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 permit, including completion of the closure. All financial assurance forfeited shall become immediately payable to NMED.
 - g. LAC may request a review by NMED of remaining closure measures 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.
 - h. The financial assurance shall be released or modified when the NMED determines that 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.

GENERAL TERMS AND CONDITIONS

Record Keeping

46. LAC shall maintain at its facility a written record of all data and information on monitoring of ground water, surface water, seepage, and meteorological conditions pursuant to this Discharge Permit including the following information. [20.6.2.3107A NMAC]
 - a. The date, time, and 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;

DRAFT

- g. A description of the quality assurance and quality control procedures used.
47. Such data and information described in Condition 46 shall also be maintained on all split and duplicate samples, spike and blank samples, and repeat samples. [20.6.2.3107A NMAC]
 48. LAC 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]
 49. LAC shall maintain a written record of the operation, maintenance, and repair of all facilities/equipment used to treat, store, or dispose of leachate and 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 this permit area. [20.6.2.3107A NMAC]
 50. 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, LAC 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 LAC. [20.6.2.3107A NMAC]
 51. 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

52. LAC shall allow the Secretary or an authorized representative of NMED, upon the presentation of credentials, to [20.6.2.3107D NMAC] [74-6-9.B & E WQA]
 - a. enter at reasonable times upon LAC'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. 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. 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 any effluent, water contaminant, or receiving water at any location before or after the discharge for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the New Mexico Water Quality Act.
53. 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

54. Within a reasonable time after a request from NMED, which time may be specified by NMED, LAC shall provide NMED with any relevant information to determine whether cause exists for modifying, terminating, or renewing this Discharge Permit, or to determine whether LAC is in compliance with this Discharge Permit. [20.6.2.3107D NMAC][74-6-9.B & E WQA]
55. 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

56. This Discharge Permit authorizes only those discharges specified herein. Any discharge not authorized by this Discharge Permit or any other LAC Discharge Permit is a violation of 20.6.2.3104 NMAC. LAC 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

57. LAC shall notify NMED of any changes to its waste rock, leachate, or wastewater collection or disposal systems, including any changes in the flow rate or the volume of storage, or of any other changes to its operations or processes that would result in any significant change in the discharge of water contaminants. LAC 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

58. 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 LAC 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 non-compliance 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, LAC waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [74-6 WQA]

Compliance with Other Laws

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

Liability

60. The approval of this Discharge Permit does not relieve LAC of liability should operation result in actual pollution of surface or ground water which may be actionable under other laws and/or regulations. [20.6.2.3109 NMAC]

Right to Appeal

61. LAC 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 LAC 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

64. Pursuant to 20.6.2.3111 NMAC, prior to any transfer of ownership, control, or possession of the permitted facility or any portion thereof, LAC shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Permit with the notice. LAC 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

65. The term of this Discharge Permit is five (5) years, and the Permit will automatically expire five (5) years from the date it is issued. To renew this Discharge Permit, LAC must submit an application for renewal at least 120 days before that date. [74-6-5.H WQA][20.6.2.3109.H NMAC]

ISSUED this _____ day of _____, 2010

WILLIAM C. OLSON, Chief
Ground Water Quality Bureau
New Mexico Environment Department

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

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

Locations	Sampling Profile					Notes
	Type	Q1	Q2	Q3	Q4	
Residue Pile						
MW84-04	mw		1		1	
MW84-05	mw	1	1	1	1	
RW85-01	rw	1	1	1	1	
RW85-02	rw				1	
RW87-03	rw	1	1	1	1	
RW87-04	rw	1	1	1	1	
MW87-11	mw	1	1	1	1	
MW87-12	mw		1		1	
MW91-19	mw	1	1	1	1	
MW91-21	mw	1	1	1	1	
MW92-33	mw	1	1	1	1	
MW95-46	mw	1	1	1	1	
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	1	1	1	1	
MW95-51	mw	1	1	1	1	
MW96-59	mw	1	1	1	1	
RW96-06	rw	1	1	1	1	
Waste Rock Pile						
MW92-22	mw		2		2	
MW92-23	mw	2	2	2	2	
MW92-24	mw	2	2	2	2	
MW92-25	mw		2		2	
MW92-26	mw		2		2	
MW92-27	mw	2	2	2	2	
MW92-28	mw	2	2	2	2	
MW92-29	mw	2	2	2	2	
MW92-30	mw	2	2	2	2	
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		2		2	
MW96-61	mw		2		2	

Locations	Sampling Profile					Notes
MW96-62	mw		2		2	
MW96-64	mw	2	2	2	2	
MW96-65	mw				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	cp	2	2	2	2	
Dolores Seep	sp	2	2	2	2	
Dolores Spring	spg	2	2	2	2	
Deer Spring	spg		2		2	
Land App Pond	cp					Quarterly monitoring for field parameters, cyanide (total and weak acid dissociable), and nitrate as nitrogen
<p><u>Type:</u> mw = monitoring well rw = recovery well spg = spring sp = seep cp = collection pond</p>					<p><u>Sampling Quarter:</u> Q1 = Jan-Mar Q2 = Apr-Jun Q3 = Jul-Sep Q4 = Oct-Dec</p>	
<p>Profile 1 (dissolved concentrations)</p> <p><u>Analyte Suite</u> Bicarbonate Calcium Copper Cobalt Cyanide (total) Cyanide (weak acid dissociable) Iron Manganese Nitrate as Nitrogen Sulfate Total Dissolved Solids</p> <p><u>Field Parameters</u> pH Water Level/Depth Electrical Conductivity Temperature</p>				<p>Profile 2 (dissolved concentrations)</p> <p><u>Analyte Suite</u> Aluminum Arsenic Bicarbonate Cadmium Calcium Chromium Iron Manganese pH (lab measured) Sulfate Total Acidity</p> <p><u>Field Parameters</u> pH Water Level/Depth Electrical Conductivity Temperature</p>		