

State of New Mexico
Energy, Minerals and Natural Resources Department

Michele Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Cabinet Secretary

Albert Chang, Director
Mining and Minerals Division



Electronic Transmission

June 13, 2023

Eric Burch, Project Manager
LAC Minerals (USA) LLC
Cunningham Hill Mine Reclamation Project
P.O. Box 98
Grants, NM 87020

RE: Agency Comments on the Amendment to Application for Revision 20-1 and Proposed Cost Estimate, Closure/Closeout Plan Update, Cunningham Hill Mine, Permit No. SF002RE

Dear Mr. Burch,

The New Mexico Mining and Minerals Division (MMD) is currently processing an application to revise Permit No. SF002RE, Cunningham Hill Mine (Revision 20-1) operated by LAC Minerals (USA) LLC (LAC). LAC most recently submitted:

1. A pit slope stability analysis work plan, dated April 10, 2023 (**Slope Stability Work Plan**);
2. a request to postpone the requirement to regrade the benches on the waste rock pile, dated March 9, 2023 (**Waste Rock Pile Bench Regrade Request**); and
3. a response to agency comments and three updated cost estimates on February 23, 2023 (**LAC Response Letter**).

These documents can be found on our website at: <https://www.emnrd.nm.gov/mmd/mining-act-reclamation-program/pending-and-approved-mine-applications/mining-applications-regular-existing/sf002re-lac-minerals-cunningham-hill-revision-20-1/>.

MMD sent the LAC Response Letter to the New Mexico Environment Department (NMED) and the New Mexico Office of the State Engineer (NMOSE) for additional comments. Their responses are attached. MMD requested additional information on the Slope Stability Work Plan in a separate letter dated May 4, 2023, and received responses to those comments on June 2, 2023. MMD is reviewing those responses and will address them in a separate letter.

After reviewing the LAC Response Letter, Waste Rock Pile Bench Regrade Request, and Agency Comments, MMD is requesting that LAC respond to the following comments:

MMD Comments

LAC Response Letter (cost estimates)

1. The costs associated with the contingency plan for 8 acres of cover material to be placed on the waste rock pile (also referred to as the *borrow material location study*) are considered earthwork/revegetation costs and should be addressed under Permit No. SF002RE. These costs are not eligible for a Net Present Value (NPV) analysis. MMD will require that these costs be accounted for under the Permit No. SF002RE cost estimate.
2. In the *Waste Rock Dumps* tab of the Permit No. SF002RE SRCE spreadsheet, there are no revegetation costs reported for the waste rock pile. As LAC has not yet demonstrated that the waste rock pile has met MMD revegetation standards pursuant to Permit No. SF002RE, LAC is required to provide financial assurance to address the revegetation costs for the waste rock pile and any other disturbed areas that have not yet been released from the New Mexico Mining Act.
3. Please provide a figure depicting the location of the proposed borrow area for the 8-acres of cover as contingency on the waste rock pile. The “Quarries and Borrow Pits” tab in the DP-55 cost estimate accounts for only one acre of disturbance for the borrow area, and a haul distance of 5,100 ft (found under the “Waste Rock Dumps” tab). These numbers seem low. Confirm that the haul distance and borrow area size is correct based on the location of the borrow area and anticipated depth (volume) of borrow material.

Waste Rock Pile Bench Regrade Request

4. MMD and NMED have responded jointly to address the Waste Rock Pile Bench Regrade Request on May 17, 2023. LAC must provide adequate financial assurance to address the Waste Rock Pile Work Plan that was conditionally approved on October 14, 2022. MMD will require that these costs be included in the cost estimate for Permit No. SF002RE and are not eligible for NPV analysis.

Agency Comments

5. Refer to the April 10, 2023 NMOSE comment letter (attached).
 - a. Provide justification of what inflows/outflows are used to describe the major decreases and increases in the pit lake elevation “no-diversion” line (e.g. 1996 and 2005), particularly before 2006.
 - b. Is the pit lake elevation being manipulated over time in order to follow the “no-diversion” line, or are the pit lake elevation changes largely due to natural causes (i.e. storm events, evaporation changes, etc.)?

June 13, 2023

Page 3 of 3

Please respond to the NMED comment letter and MMD comments within 45 days of receipt of this letter. If you have any questions, concerns, or would like to meet again regarding these comments, please contact me at (505) 216-8399 or at carmen.rose@emnr.dnm.gov.

Sincerely,



Carmen Rose, Permit Lead
Mining Act Reclamation Program (MARF)
Mining and Minerals Division

Attachments: April 18, 2023 Letter to MMD from NMOSE
May 15, 2023 Letter to MMD from NMED

CC: DJ Ennis, Program Manager, MARF, MMD
Joe Fox, Program Manager, NMED
Kevin Myers, Senior Reclamation Specialist, MARF, MMD
Anne Maurer, Permit Lead, NMED
Daniel Lattin, Program Manager, LAC
Brad Bingham, Director of Closure Operations, Barrick Gold Corporation
Gabe Wade, Assistant General Counsel, MMD
Eric Jantz, Attorney, NM Environmental Law Center
Mara Yarbrough, NM Environmental Law Center
Tom Parker, Friends of Santa Fe County
Ross Lockridge, Friends of Santa Fe County
Dennis Kurtz, President, San Marcos Association

MEMORANDUM
OFFICE OF THE STATE ENGINEER
Hydrology Bureau

DATE: April 18, 2023

TO: Carmen Rose, Permit Lead, Mining Act Reclamation Program

THROUGH: Katie Zemlick, Ph.D., Hydrology Bureau Chief *KZ*

FROM: Christopher E. Angel, PG, Senior Hydrologist, Hydrology Bureau *CEA*

SUBJECT: Additional Comments on Permit Revision 20-1 to Update Closure/Close Out Plan and Financial Assurance, Permit No. SF0002RE, Cunningham Hill Mine

I. Introduction

The New Mexico Office of the State Engineer (NMOSE) Hydrology Bureau received the Mining and Minerals Division's (MMD's) March 9, 2023, request for additional comments on the subject Cunningham Hill Mine (CHM) Closure Plan and Financial Assurance. The application materials were downloaded from <https://www.emnrd.nm.gov/mmd/mining-act-reclamation-program/pending-and-approved-mine-applications/mining-applications-regular-existing/sf002re-lac-minerals-cunningham-hill-revision-20-1/>.

This request for additional comments includes a review of LAC's responses to NMOSE Hydrology Bureau's comments dated June 27, 2022. The NMOSE comments were as follows:

- 1) *On Page 4 of JSAI (2022), it is stated that the "Observed water levels have closely followed the "no diversion" simulation." This is supported by Figure 3 – a graph showing open pit water levels and how they follow the simulated – no diversion curve. There are many water level perturbations on this graph. Several of these perturbations are from a former reverse osmosis treatment system, pumping from the Guest House Well, Residue Pile plume recovery system, surface water diversion from Cunningham Gulch runoff, etc. On page 11 of JSAI (2022), it is stated that the Nano Filtration was started in 2021 and that the Guest house well and Residue Pile plume recovery system are added to the open pit (no volumes are supplied).*

With the above context, the following information is requested:

- 1) *A summary table of all the inflows and outflows from the time mining ceased (1987) to the current time period. This table should include but is not limited to any water that was removed from the open pit for remediation, the amount of post treatment water returned to the pit, surface water diverted into the pit, and groundwater that is pumped into the pit. This information can then be used to explain the perturbations in Figure 3 on page 7 of JSAI (2022) and determine how the pit reacts to different stressors.*

Additionally, the NMOSE Hydrology Bureau reviewed the comments and reports from the public hearing and other agency responses. This review was performed to identify any potential hydrologic concerns.

II. Open Pit Water Levels

LACs responses do not adequately address the inflows and outflows from the open pit lake. Their response directs the NMOSE Hydrology Bureau to look up the information in historical reports including JSAI (2011) updated groundwater flow model for the diversions from 1987 to 2011 and the associated analysis and then utilize Table 3 from the Updated CCP Appendix E report and DP-55 annual reports. The NMOSE Hydrology Bureau has attempted to put some of the information about potential water outflows and inflows onto the attached open pit water levels and model simulated graphs (Figure 1).

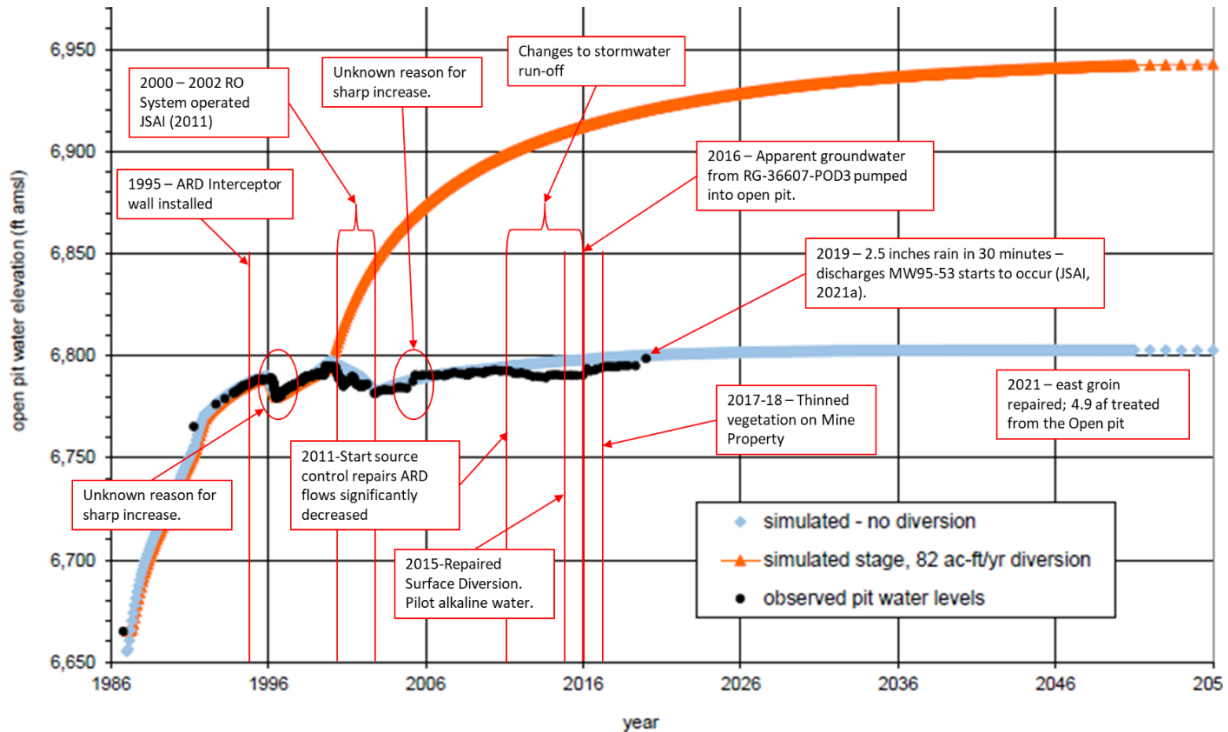


Figure 1: Open Pit Lake and modeled water level elevations along with events that may affect the open water level (modified Figure 3 from JSAI, 2022).

Figure 1 (modified Figure 3 from JSAI, 2022) documents the actual open pit lake water levels and the model results. There are many variations in the open pit water levels. These variations and the changes that may have created are listed below:

- 1) A sharp increase in the pit water level occurs in 2005. No documentation has been supplied for this increase in open pit water level has been supplied.
- 2) There is a decrease in water levels between 2011 and approximately 2013 that does not follow the "No diversion" simulation.
- 3) Between approximately 2013 and 2016 the water levels are relatively flat below the no diversion line.
- 4) In 2016 there was a sharp increase of approximately 5-feet in the open pit water level. This gain in open pit lake water level is not explained by the weir data and may be from

supplemental water being input into the open pit. This input of water would make the water levels appear to follow the no diversion line.

- 5) In 2019, the open pit lake water levels increase to nearly 6,800 ft msl. This nearly 5-foot increase in water level is partly due to a large rain event.
 - a. Surface water diverted into the pit was 20.91 ac-ft.
 - b. RG-36607-POD3 and the residue pile recovery system also pumped 13.61 ac-ft.
 - c. If no evaporative losses were suffered and no other water flowed in to or out of the open pit, then the estimated increase in the open pit water levels would be approximately 22 feet.

Several other groups or individuals have raised concerns about the open pit water levels. Public Comment 22 and 25 (LAC, 2023) raises the concern about the open pit lake being a sink due to evaporative losses and if the current open pit water level is sustainable. As was mentioned by the NMOSE Hydrology Bureau's comments, the open pit lake may follow the "no diversion" line due to water permits supplying water to the open pit lake and thereby maintaining the water level and the water quality. However, without knowing the amounts of water being supplied or removed from the open pit lake, the NMOSE Hydrology Bureau cannot determine if the open pit lake follows to "no-diversion line" or if this is sustainable.

Hearing Officer Report

In the Hearing Officer Report submitted by Felicia L. Orth, Steve Finch states that "the open pit water body has elevated total dissolved solids (TDS) and sulfate that's currently being treated". Based on this information the amounts of water being removed from the open pit and returned to the open pit need to be well documented and published to determine if the model follows the "no diversion" line. The stability of the open pit lake may be dependent on the inflows and outflows as can be seen on Figure 1 of this report.

Several other individuals offered public comment both orally and written on the open pit lake. Several of the comments contained concerns about climate change and increased evaporation. This increased evaporation may allow for the open pit levels to change. Therefore, it is necessary to demonstrate if the open pit lake water levels are stable by engineered methods or stable in a natural state.

The San Marcos Association

The San Marcos Association asks the question "is there any assurance that the current pit water level is sustainable?" As presented earlier in this report the NMOSE Hydrology Bureau needs the applicant to document all the inflows and outflows from the open pit lake. This will allow the NMOSE to evaluate the pit water levels as being "stable" and under what conditions they may be stable. In addition, the NMOSE Hydrology Bureau is requesting the MODFLOW Model files to

continue the evaluation of the open pit lake water level stability and the stability of the water levels for any engineered controls for the open pit lake water levels.

Jim Kuipers, P.E. Kuipers & Associates LLC Report (2022)

Kuipers (2022) discusses water levels in the open pit lake. He recommends that the CCP should be updated to address the amount of discharge to the surrounding groundwater at various open pit lake levels. This report also stated that "The CCP should define and identify the bounds of steady-state that is expected to be achieved as "near steady-state level" is not meaningful without further context." As such the NMOSE Hydrology Bureau has previously requested the inflows and outflows from the open pit lake in order to evaluate the open pit lake as being steady-state or near steady-state and what parameters are needed to meet the steady state criteria.

III. Conclusions

In conclusion, LAC Minerals (USA) LLC Responses to Comments do not satisfy the NMOSE Hydrology Bureau requests for additional information on the inflows and outflows from the open pit lake at the Cunningham Hill Mine. In addition, several others have raised issues with the open pit lake. Therefore, the NMOSE Hydrology Bureau requests:

- 1) A summary table of all the inflows and outflows from the time mining ceased (1987) to the current time period. This table should include but is not limited to any water that was removed from the open pit lake for remediation, the amount of post treatment water returned to the pit, surface water diverted into the open pit lake, and groundwater that is pumped into the open pit lake.
- 2) A copy of all the current MODFLOW model files for the Cunningham Hill Mine.

IV. References

JSAI, 2011, Update and Recalibration of Groundwater-Flow and Solute Transport Model for Predicting Potential Effects from the Cunningham Hill Mine Open Pit, Santa Fe County, New Mexico, John Shoemaker and associates, Inc., June 27, 2011.

Hearing Officer Report, State of New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division, In the matter of Revision 20-1 for the Cunningham Hill Mine Reclamation Project, Santa Fe County, New Mexico, Permit No. SF002RE

JSAI, 2022, (Finch, S.T., and Mandybur, A.) Cunningham Hill Mine Open Pit Waiver Justification, Permit No. SF002RE, Santa Fe County, New Mexico. Appendix H in Cunningham Hill Mine Reclamation Project Closure/Closeout Plan Update, John Shoemaker and associates, Inc., October 2021; Revised May 27, 2022.

Kuipers, J., 2022, Re: Comments on Revised October 2021 CCP update for MMD Permit No. SF002RE, LAC Minerals (USA) LLC Cunningham Hill Mine, From Jim Kuipers P.E., Kuipers & Associates LLC; To Ross Lockridge, Friends of Santa Fe County, November 17, 2022.

LAC, 2023, LAC Minerals (USA) LLC Responses to Comments on the Closure/Closeout Plan Update Amendment to application for Revision 20-1 Cunningham Hill Mine Permits No. SF002RE, February 23, 2023.

The San Marcos Association (undated), letter to Jerry Schoeppner, Director, Mining and Minerals Division, Cerrillos, NM.



Electronic Transmission

MEMORANDUM

Date: May 15, 2023

To: David Ennis, Program Manager, Mining Act Reclamation Program

Through: Anne Maurer, Mining Act Team Leader, Mining Environmental Compliance Section (MECS)

From: Alan Klatt, Surface Water Quality Bureau (SWQB)
Sufi Mustafa, Air Quality Bureau (AQB)

Subject: **New Mexico Environment Department (NMED) Comments, Updated Closure/Closeout Plan, Cost Estimate, and Response to Agency Comments,, Revision 20-1, Cunningham Hill Mine, LAC Minerals (USA), LLC, Santa Fe County, New Mexico, New Mexico Mining Act Permit No. SF002RE**

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on March 9, 2023 requesting that NMED review and provide comments on the above-referenced MMD permitting action. Pursuant to the Mining Act, the Cunningham Hill Mine is a regular existing mine. MMD requested comments on the application within 45 days of receipt of the request for comments. NMED requested an extension to submit comments by May 15, 2023. NMED has the following comments.

Background

LAC Minerals (USA), LLC (applicant) submitted to MMD the Revision 20-1 application on October 21, 2021. The Revision 20-1 application includes the updated Closure/Closeout Plan (CCP) and a request to update the financial assurance associated with closure activities. NMED sent MMD comments on the updated CCP on February 10, 2022. The applicant responded to agency comments and submitted two closure cost estimates including one for the remaining surface reclamation activities and activities covered under DP-

Mr. David Ennis
Cunningham Hill Mine, SF002RE
May 15, 2023

55 that are jointly held by MMD and NMED and a second cost estimate for activities associated with AP-27 that are held solely by NMED. NMED submitted comments to MMD on the cost estimates on October 12, 2022. The applicant submitted responses to agency comments and updated cost estimates in addition to a net present value schedule to MMD on February 23, 2023. NMED is hereby providing additional comments on the cost estimates and net present value (NPV) schedule.

Air Quality Bureau

The AQB has no comments

Surface Water Quality Bureau

The SWQB comments are attached.

Mining Environmental Compliance Section

The MECS has the following comments:

1. The updated CCP was submitted to MECS as part of the requirements in DP-55, which was renewed on November 20, 2020. In addition, the CCP includes the proposed AP-27 abatement costs. MECS will have additional comments on AP-27 based on technical review of Appendix B in the CCP. As such, comments will be submitted under separate letterhead directly to the applicant with a copy to MMD to ensure that AP-27 is technically complete and updated to reflect current conditions. MECS will coordinate responses to these documents with MMD prior to issuance of a comment letter to the applicant. That being said, MECS has reviewed the cost estimate for AP-27 and is providing comments on this cost estimate in this memo given the applicant is updating costs associated with surface reclamation under the Mining Act permit and water management costs associated with DP-55.

MECS understands that the applicant is providing three separate cost estimates for agency approval with the option to consolidate financial assurance under one jointly-held bond. MECS supports a jointly-held bond for costs associated with DP-55, AP-27 and SF002RE due to the fact that MMD has a Mine Forfeiture Fund that both NMED and MMD can access in the event the Cunningham Hill Mine goes into forfeiture. The fund is a protective regulatory and financial mechanism that both agencies can use to pay for site reclamation and long-term water management and monitoring in the event of a forfeiture. NMED does not have financial assurance rules nor does NMED have its own Mine Forfeiture Fund that can be invested to ensure there is money to pay for long-term operation and maintenance of mine sites. MECS, therefore, has reviewed the AP-27 cost estimate to ensure that there are appropriate and sufficient costs to cover long-term (100-years) operation, maintenance and monitoring of the abatement activities covered under AP-27 with the understanding that the applicant will be proposing a jointly-held financial assurance instrument for SF002RE, DP-55 and AP-27 as part of the renewal of the Mining Act permit. Furthermore, DP-55 is up for renewal in 2025. The cost estimates for DP-55 and AP-27 can be revisited and updated if needed at that time.

2. Based on a review of the AP-27 cost estimate and the Financial Assurance Cost Estimate Summary (Summary), the applicant is assuming that the pit will need to be treated every 20 years. It is unclear what assumptions were used for these costs, and more specifically, the associated timelines for treatment other than the applicant is stating that forecasted pit water quality will be sustainable with source controls. Additional information is needed to justify the treatment timelines proposed in the AP-27 cost estimate.
3. The costs for plugging and abandonment of the wells shown on the AP-27 cost estimate, "Well Abandonment" sheet appear to be low. Direct costs should be provided based on vendor quotes or another source to back-up these costs.
4. The borrow area as designated in the DP-55 cost estimate under the "Quarries and Borrow Pits" tab is not clearly identified in any figure. Based on discussions with the applicant, this area will be located to the southeast of the Residue Pile. A figure showing this location should be provided and verification of the haul distance from this borrow area to the areas where this material will be used should be performed. The cost estimate may need to be updated to reflect these haul distances.
5. The contingency costs associated with placement of cover on up to eight acres of the waste rock pile as shown in the "Waste Rock Dumps" tab is not eligible for NPV under the Mining Act because it will take less than five years to perform this work. NMED has agreed to NPV the long-term water management costs, but does not support inclusion of earthwork costs in the NPV schedule. It appears that these costs were included in the NPV schedule. These costs either need to be placed in the surface reclamation cost estimate or need to be removed from the NPV schedule and treated as direct costs under the DP-55 cost estimate.
6. MECS is working with the applicant on addressing conditions required pursuant to Condition C101.D of DP-55. Costs associated with meeting Condition C101.D including any bench repairs or bench regrades need to be included in the DP-55 cost estimate and are not eligible for NPV.

NMED Summary Comment

NMED is withholding issuance of the environmental determination pending satisfactory applicant response to the comments herein.

If you have any questions, please contact Anne Maurer at (505) 660-8878.

cc: Carmen Rose, Permit Lead, EMNRD-MMD
Joseph Fox, Program Manager, NMED-MECS
Shelly Lemon, Bureau Chief, NMED-SWQB
Elizabeth Bisbey-Kuehn, Bureau Chief, NMED-AQB



MICHELLE LUJAN GRISHAM
GOVERNOR

JAMES C. KENNEY
CABINET SECRETARY

MEMORANDUM

DATE: April 20, 2023

TO: Anne Maurer, Mining Environmental Compliance Section, Ground Water Quality Bureau, New Mexico Environment Department

THROUGH: Shelly Lemon, Chief, Surface Water Quality Bureau, New Mexico Environment Department

FROM: Alan Klatt, Watershed Protection Section, Surface Water Quality Bureau, New Mexico Environment Department

SUBJECT: **Request for Review and Comment, Revision 20-1, Updated Closure/Closeout Plan and Financial Assurance, Cunningham Hill Mine, LAC Minerals (USA) LLC, Santa Fe County, New Mexico, Mining Act Permit No. SF002RE**

The New Mexico Environment Department (NMED)-Surface Water Quality Bureau (SWQB) received the subject request for comments on April 10, 2023. The application for permit revision 20-1 is to update the closure/closeout plan (CCP) and financial assurance for the Cunningham Hill Mine. NMED provided comments to permit revision 20-1 on March 19, 2021, February 10, 2022, and October 12, 2022. SWQB did not include any additional comments with NMED's comments dated October 12, 2022. On February 23, 2023, LAC Minerals (USA) LLC (LAC) provided a response to NMED's comments dated October 12, 2022. SWQB has reviewed the response from LAC and does not have any additional comments to permit revision 20-1.

For questions related to these comments, please contact Alan Klatt, SWQB, at 505-819-9623.