

LAC Minerals (USA) LLC Responses to Comments

on the

**Closure/Closeout Plan Update
Amendment to Application for Revision 20-1
Cunningham Hill Mine Permit No. SF002RE
February 23, 2023**

Comment Number	Reviewer	Comment	LAC Response
1 General	MMD	MMD requires that LAC propose contingency costs for providing at least one (1) foot of cover material on at least eight (8) acres of the face (outslopes) of the waste rock pile. The update should include a plan for where this material will be sourced (e.g. on-site or off-site borrow source) and how any on-site borrow source, if deemed necessary, would be reclaimed. Costs associated with sourcing and placing this additional one foot of cover material will need to be added into the Surface Reclamation Cost Estimate (Permit No. SF002RE and DP-55).	As a long term maintenance contingency, the NMED DP-55 Standardized Reclamation Cost Estimator (SRCE) has been updated to include one (1) foot of cover material on eight (8) acres of the waste rock pile.
1A	MMD	A. See general comment above regarding costs associated with sourcing and placing an additional one foot of cover material on the waste rock pile.	See response to comment 1.
1B	MMD	B. Propose a five-year escalation rate and justification for this rate.	In accordance with the 2020 MMD Guidance for Calculating Net Present Value of Reclamation Cost Alternative 1, an escalation rate of 2.52% will be applied where the scheduled completion date for the reclamation or closeout plan does not exceed five years following closure, not including the 12-year period as described in 19.10.12.1205.C NMAC. The MMD SF002RE SRCE 2.0 estimate has been escalated by 2.52% over the 15-year period.
1C	MMD	C. The SRCE cost estimates use Nevada unit costs. Provide quotes for unit costs that are relevant to New Mexico for diesel fuel, well plugging, and wages.	The resource rates used in the cost estimate model are an average of available 2022 New Mexico contractor rates for similar work and published State of Nevada SRCE cost date file rates. Local New Mexico contractor resource rates are derived from proprietary contracts which cannot be publicly released.
1D	MMD	D. The cost detail is found in SRCE but the initial cost estimate summary should list significant assumptions as a basis for the costs estimates. Please add a list of major assumptions and unit costs to each summary table of the cost estimates. For example, add more detail on 1) identifying ponds and wells, 2) unit costs based on quotes for Nevada or New Mexico, 3) number of samples per year, 4) number of years sampling, 5) number of years for water treatment, 6) type of water treatment, 7) monitoring number of years, 8) reclaimed acreage of ponds or other areas covered, 9) acreage revegetated, 10) years of monitoring for erosion, 11) labor and unit costs based on wages, and 12) number of wells abandoned, replacement costs, etc.	Additional detail and assumptions are provided in the SRCE model summary as requested.
1E	MMD	E. Many sections in the cost estimate use the terms "cover" and "growth media". Clarify the difference between cover and growth media.	In the updated SRCE 2.0 version the type of cover material for the site and the cost estimate is named "Growth Media", although the SRCE 2.0 version has the option to place different layers of cover material. You will see in all estimate sheets that we have selected are only "Growth Media" as the cover system.

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1F	MMD	F. Page 5 of 51. Clarify why tipping fees are used for disposal of pond liners and general solid waste disposal and which pond liners are proposed to go to a landfill.	Industry practice is to close the ponds in place by folding the liner into the pond depression, backfilling and grading the area to create positive drainage then capping with Growth Media. The updated SRCE 2.0 cost estimate models reflect the industry practices for the ponds; therefore, removing need for disposal of pond liner in a landfill.
1G	MMD	G. Page 9 of 51. Please clarify which roads this section is referring to (e.g. which wells) and elaborate on if this includes reclamation of existing access roads.	This item has been removed as access roads will remain for PMLU.
1H	MMD	H. Page 13 of 51. MMD will require a minimum of two feet of cover to be placed over broken up concrete foundations or a minimum of four feet of cover over unbroken concrete slabs. Please clarify how LAC will reclaim the building foundations (lime silo, ARD pumphouse, ARD storage shed, and CN pond pumphouse) and confirm that the appropriate amount of cover is accounted for in the cost estimate.	Buildings and structures will be demolished (no salvage) and demolition debris are removed and disposed off-site at an authorized Landfill Facility. All foundations and slabs will be broken up with a Rock Hammer, buried in place with a 24 inch layer of Growth Media material and re-seeded.
1I	MMD	I. Page 33 of 51. Only 12 acres are reported under Reclamation Maintenance – Total Revegetation Surface Areas. Please update this acreage to include all acreage for all units that are still under Permit No. SF002RE, including the entire area for the waste rock pile and all processing ponds.	The NMED DP-55 SRCE has been updated to include one (1) foot of cover material on eight (8) acres of the waste rock pile as a contingency. The 8 acres represent approximately 12% of the total WRP surface and this percentage is a typical range of post reclamation repair and or maintenance on successfully revegetated facilities. Additionally, two (2) acres are included for the Reclamation Maintenance for the Ponds, including 3,510 cy of Growth Media replacement as needed. Furthermore, MMD SF002RE cost estimate includes 0.5 acre for the Reclamation Maintenance for the Ponds, including 785 cy of Growth Media replacement as needed.
1J	MMD	J. Page 33 of 51. Provide road maintenance costs, including costs associated with the sourcing and placement of caliche on the access roads.	The NMED AP-27 SRCE has been updated to include road maintenance costs, including costs associated with the sourcing and placement of caliche on the access roads at a 5yr interval over a 100yr period.
2	NMOSE	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:	Response to NMOSE Comment #1: All surface water diversions into the pit and groundwater diversions for the Residue Pile recovery well and Guest House well (RG-36607-POD3) are metered. Monthly metered volumes are provided to the NMOSE. Water diverted from the Residue Pile Recovery wells and Guest house well is stored in the Residue Pile ponds, and then added to the open pit when pH mitigation is needed. At the time of JSAI (2022) no diverted water had been sent to the open pit for 2022. Past volumes of water already diverted under CHMRP water right can be referenced from NMOSE Water Rights Division under RG-32970, RG-3707A, RG-18479, 4775, and RG-

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		<p>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.</p>	<p>36607. The reuse of diverted water from Residue Pile Recovery wells and Guest House Well to the open pit is permitted under DP-55.</p> <p>It should be noted that the NMOSE WATERS online database does not have the appropriate CHMRP approved water right permits and associated PODs listed. Originally the files and reported diversions were maintained in Water Rights Division District 1 Office and then got moved to District 6 Office. CHMRP diversions are reported under permit RG-32970 et al.</p> <p>Response to NMOSE Comment #2: Please refer to JSAI (2011) updated groundwater flow model report for all diversions from 1987 to 2011 and the associated analysis. From 2011 to current please see CHMRP updated CCP Table 3, updated CCP Appendix E report, and DP-55 annual reports.</p>
3	State of New Mexico Department of Game & Fish	<p>The New Mexico Department of Game and Fish (Department) has reviewed the above referenced update to the Closure/Closeout Plan (CCP). LAC Minerals, LLC (LAC) also submitted responses to Agency comments that included the Department's letter to MMD dated 26 January 2022, NMDGF No. NMERT-1501. Staff from the Department MMD, the New Mexico Environment Department, the U.S. Forest Service, and LAC attended a public meeting and site tour on 2 August 2022.</p> <p>The Department's recommendations have been adequately addressed in the updated CCP. LAC has agreed to work with the Department to develop an alternative, clean water source that would help attract wildlife away from the pit lake area. LAC is also working on obtaining the funds required to install wildlife fencing that meets the Department's recommended specifications in order to more effectively exclude wildlife from accessing the pit lake.</p> <p>In addition, LAC has remedied the ongoing issue regarding sagging protective netting at the acid rock drainage (ARD) collection ponds. Unfortunately, the site tour on 2 August 2022 did not include the ARD collection ponds. The Department requests that MMD schedule a joint site visit, to allow for inspection of the wildlife netting repair work, at their earliest convenience. The Department had recommended that the system for supporting the netting be redesigned to ensure that the netting would not sag back down into the toxic ARD water. LAC has also</p>	<p>Acknowledged. ARD ponds netting was successfully replaced and inspected by the agencies in the fourth quarter of 2022.</p>

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		consulted with the Department about the use of bird balls as a possible alternative to netting. The Department will continue to work with MMD and LAC to effectively prevent any wildlife from accessing the ARD collection ponds.	
4	New Mexico Environment Department – Air Quality Bureau	The AQB has no comments.	Acknowledged.
5	New Mexico Environment Department - Surface Water Quality Bureau	The SWQB has no comments.	Acknowledged.
6	New Mexico Environment Department - Mining Environmental Compliance Section	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 the proposed cost estimate and 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. The comments herein only address questions or concerns associated with the facilities that are regulated under DP-55.	Acknowledged.
7	New Mexico Environment Department - Mining Environmental Compliance Section	2. NMED, MMD, and New Mexico Game and Fish performed a site inspection of the Cunningham Hill Mine on September 15, 2022. Representatives from each agency walked the Waste Rock Pile benches and outcrops as part of the review of the August 5, 2022 Response to Joint Agency Request for Additional Information, Waste Rock Pile Workplan Design Package and 2021 Cover Performance Review, Cunningham Hill Mine Reclamation Project, MMD Permit No. SF002RE and DP-55. Based on the site inspection, there are numerous areas where erosion has caused a loss of cover on the outcrops and there is evidence of rilling occurring most typically where there is an inflection point where the outcrops meet the benches. The agencies also identified a number of areas where there appears to be small, exposed areas of waste rock at the surface. The agencies will comment directly to the applicant on this submittal under separate letterhead. However, based on a review of the May 2022 surface reclamation cost estimate, NMED will require the applicant to provide additional financial assurance that will cover one foot of cover placement for eight acres	Erosion observed during September 15, 2022 has been repaired as of November 30, 2022. As a long-term maintenance contingency, the NMED DP-55 SRCE has been updated to include one (1) foot of cover material on eight (8) acres of the waste rock pile.

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		of outcrops on the Waste Rock Pile as part of general site operation and maintenance costs. These costs can be either addressed under the waste rock dump recounting and earthwork costs or in another section of the cost estimate that the applicant deems more appropriate. In addition, additional costs will be needed for revegetation of any area where new cover is applied. This will ensure that there is money in place to perform cover corrective actions in the future in the event the cover continues to erode.	
8	New Mexico Environment Department - Mining Environmental Compliance Section	3. Well Abandonment – pg 28 of 51 in the Closure Cost Estimate (pg. 199 in total package) – Please explain what active versus inactive wells are representative of. It appears that a number of wells will be abandoned in 2021, but some wells will be abandoned in 2121. Please provide a description of the wells to be abandoned in 2021 and 2121.	<p>Inactive and or obsolete Monitoring, Injection and Recovery Wells will be plugged and abandoned in accordance with the NM regulations and obtained permits.</p> <p>The following wells will be plugged and abandoned.</p> <p>-(14) Inactive Monitoring, Injection and Recovery Wells will be plugged and abandoned as soon as possible and when permit is granted.</p> <p>-(39) Active Monitoring, Injection and Recovery Wells will be gradually plugged and abandoned towards the end of the 100-year monitoring period.</p>
9	New Mexico Environment Department - Mining Environmental Compliance Section	<p>4. Additional details on water quality monitoring are needed. The comments are as follows:</p> <p>a. pg. 34 of 51 (pg. 205 in total package) – Please explain what LAC Profile 1 means. NMED understands that this is a water quality sample taken from the open pit water body. All costs associated with monitoring the open pit water body need to be in AP-27, not the closure cost estimate.</p> <p>b. There are no costs associated with long-term well monitoring. Based on the well abandonment sheet, there will be 32 wells to be abandoned in 2121. The costs for monitoring these wells for 100 years need to be reflected in this cost estimate.</p> <p>c. Please address if there are costs associated with monitoring well replacement. Given NMED is requiring 100 years of water quality monitoring, a number of wells likely will need to be replaced within this timeline.</p> <p>d. There do not appear to be any costs associated with operating and maintaining any of the site recovery wells. These include the Dolores Gulch Recovery wells, the Residue Pile Recovery wells, or the UIC well. Costs associated with operating and maintaining these wells needs to be included in this cost estimate.</p> <p>e. There are no costs for monitoring the ARD Treatment System ponds or the Residue Pile Plume Remediation ponds. DP-55 contains monitoring requirements that need to be reflected in the cost estimate. In addition, there do not appear to be any costs associated with long-term operation and maintenance of these systems. NMED assumes that these will be in operation for a number of years until site standards are</p>	<p>Response to Comment 4a: The LAC Profile 1 for the Residue Pile under DP-55 is shown in the 2021 updated CCP Appendix B Contingency Plan. Cost associated with monitoring the open pit water body are included in the NMED AP-27 SRCE.</p> <p>Response to Comment 4b: Costs associated with long-term well monitoring are based on semi-annual monitoring for AP-27 and annual monitoring for DP-55 using the groundwater constituent lists for AP-27, DP-55 Profile 1 for Residue Pile, and DP-55 Profile 2 for Dolores Gulch. Estimated clean up time and post clean up monitoring:</p> <ul style="list-style-type: none"> • Residue Pile cleanup completed by 2025 with five years of post-cleanup monitoring (2030). • WRP-Dolores Gulch cleanup plan submitted May 2021 provides a 12-year period for accelerated plume recovery for most of Dolores Gulch. It is likely that an additional eight years of post-cleanup maintenance and monitoring will be required. The current monitoring frequency and constituent list will be employed for the next 12 years, followed by eight years of semi-annual monitoring, then annual monitoring from a reduced constituent list. <p>Response to Comment 4c: Costs associated with well replacements is based on the ability to define nature and extent of existing contaminant plumes. No replacement wells</p>

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		<p>met. Costs associated with liner replacement and any other maintenance activity need to be reflected in this cost estimate.</p> <p>f. There are no monitoring costs associated with monitoring the seeps and springs. The requirement to monitor these locations are included in DP-55. Please explain why these costs are not included in the cost estimate.</p> <p>g. Please explain why there are no monitoring costs associated with the Interceptor Wall. Pursuant to DP-55, the water level is required to be monitored. Please address why costs are not included to monitor this location.</p> <p>h. NMED is requesting that the applicant submit a monitoring schedule for the next 100 years that shows the locations to be monitored and the frequency of monitoring (i.e., annual, quarterly, etc.). This would be helpful in understanding what will be monitored post-closure.</p>	<p>are anticipated for Residue Pile groundwater plume as cleanup is schedule for completion not later than 2025.</p> <p>A cleanup plan has been submitted to NMED for Dolores Gulch. It is possible that replacement of Dolores Gulch recovery wells will be required in the next 10 years. No active monitoring wells are projected to go dry, therefore no monitoring wells are anticipated to be replaced.</p> <p>Response to 4d: Costs associated with operation and maintenance of recovery wells including UIC wells. The primary O&M costs for recovery wells are pump replacement, meter replacement, and cleaning of screens. The frequency of meter and pump replacement and screen cleaning is once every 10 years. Estimated cost per recovery well is \$7,500, which includes pump contractor mobilization, pump pull and reinstall, pump replacement, brushing screen, and new meter install. UIC wells do not require O&M other than meter replacement because the system is gravity operated.</p> <p>Based on current system performance and reduced plume size, Residue pile recovery and UIC wells will no longer be required after 10 years.</p> <p>Dolores Gulch recovery wells maybe needed for the 100 year period, depending on if the NMED approves the May 2021 proposed cleanup plan.</p> <p>Response to Comment 4e: Cost for monitoring, operation, maintenance, and closure related to DP-55 permit requirements are included for a 100-year period in the attached DP-55 SRCE closure estimate.</p> <p>Response to Comment 4f: Costs associated with monitoring the seeps and springs related to DP-55 permit requirements are included for a 100-year period in the attached DP-55 SRCE closure estimate.</p> <p>Response to Comment 4g: Costs associated with monitoring the Interceptor Wall related to DP-55 permit requirements are included for a 100-year period in the attached DP-55 SRCE closure estimate.</p> <p>Response to Comment 4h: Monitoring schedule assumptions for the 100-year period is shown in the attached SRCE Models Summary document.</p>

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10	New Mexico Environment Department - Mining Environmental Compliance Section	NMED is withholding issuance of the environmental determination pending satisfactory applicant response to the comments herein.	Acknowledged.
11	MMD	MMD will require the proposal of a new pit wall stability analysis or update to the original pit wall stability report from Call & Nicholas, Inc. dated October 6, 1994, to address concerns of any future pit wall failures as they relate to wildlife and human health and safety.	<p>A third-party professional engineer will be contracted to review and perform an update to the 1994 pit wall stability assessment. Assessment will take approximately 3-months and will include the following:</p> <ol style="list-style-type: none"> 1. Data review (geological, geotechnical, topographic, etc.) 2. Site visit and visual inspection to evaluate the pit condition and to identify potential sources of slope instability. 3. Limit-equilibrium slope stability analysis for critical areas identified during the site visit. 4. Technical memo summarizing the results of the stability assessment and the potential risk to wildlife and human health that future potential pit wall failures may have.
12	MMD	Describe in detail what level of storm event the existing stormwater designs are built for (e.g. 100 yr-24hr storm event). Provide discussion on how previous and anticipated future storm events at the Cunningham Hill Mine impact how LAC will adapt the design of existing storm water controls and/or construct new storm water controls at the mine site.	<p>The existing CHMRP stormwater designs are built for 100-year, 24-hr precipitation event for permanent diversions as required by 19.10.5 NMAC (see 1996 CHMRP CCP).</p> <p>Previous storm events and precipitation patterns at CHMRP are discussed in section 3.4.3 of the CCP. Past stormwater designs were based on a 100-yr, 24-hr precipitation event of 3.4 or 3.5 inches (from SCC, 1971 NM-N-0374). Calculations from NOAA Atlas 14 Vol version 5 provide a 100-yr, 24-hr precipitation event of 3.47 inches. The most intense precipitation event recorded at the site was 2.5 inches in 30 minutes (CCP, Appendix E). All existing stormwater controls have functioned as designed, therefore no anticipated adaptations are expected.</p>
13	Public Comment	<p>1. General Comments on the CCP</p> <p>The application of the requirements of the NMMA at mine sites that were operating or otherwise permitted to operate in the 1990s, together with concurrence as to meeting other applicable requirements, in particular with respect to the NM Environment Department (NMED) groundwater discharge permit regulations, in a</p>	LAC acknowledges that this comment is directed to the New Mexico Mining and Minerals Division and New Mexico Environment Department.

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		<p>comprehensive CCP, has been a challenging task. As someone who has participated directly on behalf of numerous public interest organizations in NM it is my opinion that MMD and NMED have in general been progressive in their approach to applying their regulatory authority. However, as the former CHM site demonstrates, hardrock mine reclamation and closure tasks involve recognition of the mine’s entire life-cycle, which often goes beyond original expectations of a walk-away scenario 12 years after reclamation is completed. Once Mining Influenced Water (MIW) is recognized, mitigation of impacts typically becomes a complicated matter, and rarely do predictions, both over the short-term and long-term, come out as expected.</p> <p>Recommendation: In order to ensure that the requirements for long-term monitoring and maintenance are minimized, and where they cannot be eliminated that they are financially assured, the MMD and NMED should take a conservative approach and require that any uncertainty in future outcomes be considered a liability and reflected in both the CCP and in financial assurance. This approach is further reflected in comments specific to the CHM CCP, AP-27 and DP-55.</p> <p>It is also recommend as reflected further in these comments that the CHM CCP comprehensively recognize and address the requirements of AP-27 and DP-55. To a large extent, questions as to the completeness of the CHM CCP and adequacy of financial assurance are contingent on these critical permits under NMED’s purview, particularly with respect to post-closure. We have consistently recommended to NMED that the CCPs originally required by the NMMA include and address all abatement plans as well as discharge permits under NMED’s purview as a means of providing documentation of the comprehensive approach being taken to address the complicated issue of mine reclamation, closure, and long-term post-closure.</p>	
14	Public Comment	<p>2. Section 1.1 Purpose of Plan According to the CHM CCP “The updated CCP describes closure, remediation, and reclamation actions which LAC will take for those areas not yet fully reclaimed” and the CHM CCP “...will be completed to the standards set forth in 19.10.5 NMAC as well as New Mexico Water Quality Control Commission (NMWQCC) regulations as specified in Discharge Plan DP-55 and Abatement Plan AP-27.”</p> <p>Recommendation: As discussed in more detail in subsequent comments, the CCP should also describe post-closure monitoring, maintenance and operations which LAC will take for both areas that have already been or yet to be “fully reclaimed.” This is also necessary for the CCP to be consistent with the requirements of DP-55 and AP-27.</p>	As discussed and presented in Section 7 of the CCP, Post-closure monitoring for reclaimed areas is detailed in CCP Appendix B - Updated Contingency Plan
15	Public Comment	<p>3. Section 2.0 PERMITS AND REGULATORY REQUIREMENTS According to the CHM CCP “The CCP presents all of the information required by NMMA Rule 5.6 and, if followed, will achieve the requirements of Section 69-36-11B (3).” NMMA Section 69-36-11B (3) requires that “the closeout plan specifies incremental work to be done within specific time frames that, if followed, will</p>	Please note that this is an update to an already previously approved CCP. The primary reason of the update was to address specific requirements for the CHMRP open pit and to incorporate the AP-27 revised reclamation plan. The updated CCP was prepared in 2020 prior to the renewal of DP-55 in November 2020. As requested by the agencies, the

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		<p>reclaim the physical environment of the permit area to a condition that allows for the reestablishment of a self-sustaining ecosystem on the permit area following closure, appropriate for the life zone of the surrounding areas unless conflicting with the approved post-mining land use; provided that for purposes of this section, upon a showing that achieving a post-mining land use or self-sustaining ecosystem is not technically or economically feasible or is environmentally unsound, the director may waive the requirement to achieve a self-sustaining ecosystem or post-mining land use for an open pit or waste unit if measures will be taken to ensure that the open pit or waste unit will meet all applicable federal and state laws, regulations and standards for air, surface water and ground water protection following closure and will not pose a current or future hazard to public health or safety.” (underline added).</p> <p>Recommendation: NMMA Rule 5.6 should be cited as 19.10.5.6 NMAC. The CCP should clarify that the CCP presents all the information required by Title 19.10.5 and not just 19.10.5.6. As further discussed in these comments, the CHM CCP does not presently describe, for either facilities waived or for facilities not waived, measures that will be undertaken to ensure that any waste unit will meet all applicable federal and state laws, regulations and standards for air, surface water and ground water protection following closure (e.g., post-closure) and will not pose a current or future hazard to public health or safety. As previously mentioned, this requires the CHM CCP to comprehensively incorporate the requirements of AP-27 and DP-55.</p>	<p>updated CCP was revised to include requirement of the renewed DP-55. AP-27 requirements are detailed throughout the updated CCP including Appendices B, E, and H</p>
16	Public Comment	<p>4. Section 3.2.1 Cunningham Hill Mine Open Pit Pit Wall Failure/Mass Wasting</p> <p>Consistent with and as was noted in previous comments submitted to MMD by the New Mexico Mining Act Network (NMMAN) concerning the October 2020 CHM CCP Update, which this 2021 CHM CCP document replaces, a geotechnical investigation was conducted to evaluate the probable long-term stability of the Cunningham Hill Open Pit Slopes (Call & Nicholas, Inc. 1994). According to the CCP, the evaluation concluded that the current post-mining configuration is stable and that the probability of the occurrence of a large-scale slope failure is low. Our comments questioned the findings of the 1994 report and reliance by the agencies on “predictions” with a high level of uncertainty. In their response to MMD,1 LAC dismissed the issue of open pit highwall stability suggesting it would be addressed by filing for a pit waiver and the construction of a fence to exclude people and wildlife, and suggesting any remaining issue will be addressed under AP-27.</p> <p>As previously noted, NMMA Section 69-36-11B(3) requires that “... upon a showing that achieving a post-mining land use or self-sustaining ecosystem is not technically or economically feasible or is environmentally unsound, the director may waive the requirement to achieve a self-sustaining ecosystem or post-mining land use for an open pit or waste unit if measures will be taken to ensure that the open pit or waste unit will meet all applicable federal and state laws, regulations and standards for air, surface water and ground water protection following closure and will not pose a current or future hazard to public health or safety.” (underline added) This suggests a pit waiver does not relieve the permittee from addressing pit stability. And while a fence may exclude people and wildlife, if it is adequate to do so, maintained, signed, and trespassing actively</p>	<p>Please note that the CHMRP 2021 updated CCP does not replace the work performed by Call & Nichols (1994)</p> <p>LAC agrees that the site-specific geologic factors at the CHMRP open pit are significantly different than those at the Montana Tunnels mine. The rock at CHMRP open pit is significantly more competent, the CHMRP open pit has been unchanged for over three decades, there are no hydrostatic pressures from groundwater on the exposed walls and benches (relatively flat water table in equilibrium with the open pit water body), and no stress fractures have been observed.</p> <p>LAC is committed to updating the CHMRP open pit slope stability analysis. Results of the analysis will be incorporated into AP-27 requirements. See response to Comment 11.</p>

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		<p>enforced, the location of the fence must consider the open pit boundaries as they become altered by slope failure and/or mass wasting over time. Slope stability will lead to changes in the exposure of potential acid generating material in the pit highwalls and to deterioration of source controls, neither of which are currently addressed in AP-27. As an exhibit demonstrating the extent to which open pit highwalls can deteriorate, a report I prepared on the Montana Tunnels mine is included as Appendix A. The example provided demonstrates the fast progression of open failure caused by site-specific geologic factors. While those factors at the CHM are different, in general a similar result will occur over time as has already been seen in localized areas of the CHM open pit.</p> <p>Recommendations: MMD and NMED should require as a condition of their permits that the previous geotechnical investigation conducted in 1994 be updated based on current site observations and modern methods. In conducting the evaluation, “long-term” should be defined as over geologic time. Safety should address not only “public” safety but the future safety of regulators and contractors who at some point in the future will be required to perform the site monitoring and maintenance, as well as any water treatment operations, next to or within the Open Pit and waterbody. For this reason, the investigations should also include a multi-stakeholder Failure Modes and Effects Analysis (FMEA) that considers the various types and extents of open pit wall failures that could occur (e.g., failure modes), the probability and consequences of occurrence, and mitigation measures that could be used to reduce the probability and/or consequences of occurrence. MMD should require that post-closure (e.g., post 12-year revegetation sustainability period) measures and corresponding tasks be identified and details provided to address people and wildlife exclusion by fencing including how fencing will be maintained, signed, trespassing actively enforced, and how the location of the fence will consider the open pit boundaries as they become altered by slope failure and/or mass wasting over time.</p> <p>The CHM CCP should explicitly identify how open pit highwall stability will be addressed under AP-27. The currently applicable Re-Issued Abatement Plan, AP-27, Cunningham Hill Reclamation Project issued on October 31, 2002 is attached as Appendix B. Examination of AP-27 does not indicate consideration has been given to how pit highwall failure and/or mass wasting of the pit area in general will result in ongoing/increased potential for acid generation and metals leaching over time affecting pit lake and/or groundwater quality. It does not describe or require any monitoring, maintenance or mitigation measures to address pit highwall failure and/or mass wasting impacts on water quality and therefore there is no financial assurance to address this potential issue, which if it does occur at some point in the future when LAC is no longer viable as an owner, will result in government and therefore public liability. NMED should require that this issue be addressed in an updated AP-27, or alternatively roll AP-27 into DP-55 and include requirements to address pit highwall stability.</p> <p>It is also noted in making this recommendation that NMED required Freeport Mining Inc. to conduct an Open Pit Highwall Risk Analysis as part of the Tyrone Mine’s DP-1341 under C110 Additional Studies. To address the potential/eventual open pit highwall failure as it would impact the CCP is an insightful requirement given that while pit highwall failure is inevitable and can have significant consequences, because it may not</p>	<p>Noted. Open pit source controls and revised remediation plans have been and will continue to be addressed under the jurisdiction of the NMED AP-27.</p>

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		<p>immediately occur it is nearly always overlooked in reclamation and closure planning. However, in the same way that water quality protection has made it clear that with many hardrock mines there is no such thing as “walk away reclamation,” it will eventually also become clear that public safety and the long-term geological evolution of human created holes in the ground, or open pit mines, will also require a long-term commitment in many cases.</p> <p>AWS Source Controls As noted in the CHM CCP, it was originally predicted that the Open Pit would fill from the Upper Cunningham Gulch surface water diversions to an elevation of 6,900 ft amsl in 35 years, and in doing so would inundate Acid Wall Seeps (AWS) and improve water quality, and “... would not become acidic with time and would not detrimentally affect local surface and groundwater resources.” However, according to the CHM CCP, “infiltration of stormwater through fractures to the pit walls resulted in oxidation of sulfides causing AWS and degraded the quality of the Open Pit waterbody” resulting in AP-27 and various water treatment approaches that have continued to the present. Additionally, the open pit lake water level has been reported as “... near steady-state level at 6,800 ft amsl elevation.” According to the CHM CCP, as part of source controls required to meet AP-27 water quality standards, implementation of source controls occurred between 2012 and 2018, and included: 1) repairs to the Upper Cunningham Gulch diversion to mitigate the infiltration of stormwater into fractures that report to the open pit, 2) stormwater controls in and around the Open Pit, and 3) resurfacing access roads and some bench areas with caliche. As noted in the CHM CCP, instead of relying on stormwater to submerge and dilute acid generation from the open pit highwalls, the revised plan relies on source controls to prevent AWS.</p> <p>Recommendations: In order for the current approach using “source controls” to be optimally effective in addressing water quality impacts from the open pit highwalls, a plan to monitor, repair and if necessary, replace or enhance the source controls must be required by NMED and provided in sufficient detail in the CHM CCP and financial assurance. The plan should address requirements from a combination of both stormwater events and pit highwall failure and/or mass wasting. The plan should address stormwater design standards to address the potential for climate change to cause more intense and frequent storm events. Additional recommendations in regard to recognizing and addressing anthropogenic climate change are included as Attachment C.</p> <p><u>Pit Lake Water Levels</u> According to CCP Appendix B (JSAI 2020) “Steady-state Open Pit water levels are predicted to range from 6,800 to 6,840 ft above mean seal level (amsl).” “The maximum expected open pit water level is 6,840 ft amsl, which would require an average open pit water level rise of 0.6 ft/yr over the next 60 to 70 years. The observed rise in open pit water levels over the last 4 years has been at an average rate of 2.0 ft/yr.”</p>	<p>Variations in precipitation patterns and potential effects of catastrophic wildfire on open pit water levels are addressed in CCP Appendix E. As shown on Figure 6 of CCP Appendix E, open pit water levels obtain equilibrium within 100 years regardless of the scenario modeled. Simulating open pit water level 200 years into the future will provide no additional information.</p>

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		<p>Recommendation: The CCP needs to recognize and address the predicted range in pit lake level, both due to greater and to less precipitation than might have been experienced or predicted. The CCP should address the range in discharge to groundwater that might occur at various levels of what corresponding impacts to water quality might be expected, and it similarly should address potential changes in surface water quality at various levels. The CCP should anticipate potential for both extreme drought and wet periods. The CCP should also anticipate potential fluctuations in the pit lake level due to events such as a catastrophic wildfire and subsequent flooding on the burned area and loss or increase in surface water flow. The CCP should identify what mitigation measures might potentially be required and include financial assurance for those measures, including contingencies. The CCP should provide additional information as to predicted future pit waterbody levels going out at least 200 years and identify the potential amount of fluctuation in the pit lake level over periods of drought, excess precipitation, and accounting for future climate change. The CCP should define and identify the bounds of steady-state that is expected to be achieved as “near steady-state level” is not a meaningful description without further context. If this information is not required to be included by the agencies in a revision of the current CCP then they should include this requirement as a condition of both MMD and NMED’s permits.</p>	
17	Public Comment	<p>5. Section 3.2.2 Reclaimed Waste Rock Pile According to the CHM CCP, the waste rock pile is covered by a 12-inch layer of waste rock mixed with lime and a cover consisting of six to eight inches of subsoil, and 10 to 12 inches of growth medium composed of a sandy-clay loam material. The waste rock pile reclamation was completed in 1996. The CHM CCP notes between 2011 and 2016, “... significant improvements were made to shed stormwater runoff and reduce the potential for cover erosion” and “... stormwater diversion features also assisted with reducing infiltration and generation of ARD” and also notes East Groin stormwater channel investigation of infiltration and repairs conducted in 2019.</p> <p>More recently, in response to increased waste rock leachate flows observed in the spring of 2019, a waste rock pile cover evaluation was conducted that identified cover material erosion, storm-water benches not promoting good drainage, and the poor condition of the East Groin Drainage Channel GCL. In 2021 LAC proposed to repair locations where rills have locally eroded cover material to minimize erosion and reestablish vegetation and to conduct repairs to the East Ground drainage.</p> <p>Recommendations: The ongoing repairs and improvements together with a period of increased flows in 2019, 23 years after reclamation was “completed” in 1996, requiring further repairs and maintenance, serves as an exemplary case study as to the necessary requirement for ongoing monitoring, preventative maintenance, and planning for repairs and replacement, that accompanies any engineered cover or other system of addressing leachate from waste rock piles and similar features. The experience at CHM certainly brings into question any concept of post-closure monitoring once water quality standards are achieved of 10 years as suggested in AP-27, or even 25 years as has sometimes been suggested, given that the most</p>	<p>Please note that ARD flows have been negligible since the East Groin repairs have been made in 2021, thereby bringing certainty to the Waste Rock Pile reclamation efforts. Also, DP-55, renewed November 2020, Condition 106 requires 100 years of long-term monitoring which is included in the Financial Assurance cost estimate.</p>

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18	Public Comment	<p>6. Section 3.2.3 ARD Treatment Facility This section of the CHM CCP describes the treatment and evaporation of ARD from the waste rock pile and suggests that as a result off actions implemented on the waste rock pile between 2011 to current flows have</p>	

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		<p>significant decreased and only evaporation using ponds A and B is presently required for treatment of the discharge.</p> <p>Recommendation: CHM should identify the specific flow rates that have occurred prior to and from 2011 to current as well as the corresponding water chemistry and provide and discuss the discharge in terms of concentration and load in addition to flow, as ultimately load is the best measure as to the effectiveness of source controls and other measures. As the decrease in flow may be related to storm events any discussion and prediction of future flow rates should be made pending evaluation and consideration of the 2022 wet period which has occurred in NM. As the requirement for capture and treatment of ARD from the waste rock pile is long-term it's monitoring, operation and maintenance, for the entire range of expected future conditions, should be considered in post-closure planning and financial assurance.</p>	<p>Waste Rock Pile ARD flows rates and requirement for treatment system are discussed in Section 4.4. Also see DP-55 annual reports for year 2022. ARD flow was negligible during the above average precipitation 2022 monsoon season. ARD flow is regulated by NMED under DP-55.</p>
19	Public Comment	<p>7. Section 3.3 Past and Current Land Uses According to the CHM CCP, "PMLU, as anticipated by this updated CCP, is and will continue to be for wildlife habitat. Livestock grazing may occur in the future if landownership changes. Currently, no livestock graze on the permit area."</p> <p>Recommendation: The statement in the CCP points out the need for both clarity in PMLU, and land use controls to protect the source controls and other engineered measures intended to protect revegetation, soil and water quality. Livestock grazing may negatively affect the source controls and other engineered measures if it were to be allowed to occur in the future. As has been noted and utilized at Superfund sites where remedies need to be protected, Institutional Controls such as Land Use Controls need to be implemented and enforced if the reclamation and other measures intended to protect water quality are to be maintained and continued as intended. LAC could include a covenant restricting land use to any future landowner and the Agencies should consider requiring this to be done in the event of sale as a condition of their respective permits.</p>	<p>Please refer to updated CCP Section 7.0 Post-Reclamation Monitoring and Maintenance.</p>
20	Public Comment	<p>8. Section 3.4.3 Climate This section provides limited climate information consisting of average annual precipitation and the range of precipitation over the last 22 years, maximum (potential) evapotranspiration, and average monthly temperatures. This section does not address anthropogenic climate change. As both MMD and NMED are well aware, physical impacts to both engineered cover systems and stormwater conveyances, and infiltration of stormwater into reclaimed mine facilities such as the CHM waste rock pile, as well as open pit water levels and water quality in some cases such as the CHM open pit lake, are primarily driven by other than average precipitation events either in terms of single precipitation events or by wet (or in some cases dry) periods. And has been noted by numerous authorities on climate change, while it is expected that total annual precipitation will decrease in places like the Southwest, heavier rainfall events and periodic annual precipitation may become more intense.</p>	<p>LAC acknowledges that this comment is directed to the New Mexico Mining and Minerals Division and New Mexico Environmental Department.</p>

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		<p>The National Weather Service provides information for specific weather stations including the Golden station referenced in the CHM CCP. As shown in Table 1 and Figures 1 and 2, the expected precipitation from a 1 in 100 year 24-hr storm event is estimated at 3.37 inches whereas a 1 in 1,000 year 24-hr event is estimated at 4.51 inches. Precipitation from a 1 in 100-year wet period of 30-days is estimated at 8.55 inches whereas a 1 in 1,000 year 30-day event is estimated at 10.5 inches. As has been experienced over the past decade, 1 in 100 year 24-hr storm events are without question becoming more frequent, and 1 in 1,000-year events have occurred in the recent past and are equally if not more likely to occur in the future. This past 2022 Monsoon's precipitation amount was the second wettest in the 25-year period of record kept by Santa Fe County as shown in Figure 3.</p> <p>Recommendations: The CHM CHP should be revised to recognize and address how climate is expected to be affected by climate change. The agencies should take into consideration the potential for more frequent intense storm events and wet years in their consideration as to the design, construction, maintenance and replacement of engineered covers and stormwater controls features as discussed later in these comments. Additionally, any models or other information that has been produced on behalf of LAC should be based on actual daily data and not average data which significantly compromises such efforts.</p>	
21	Public Comment	<p>9. Section 4.0 RECLAMATION COMPLETED</p> <p>The CHM CCP describes storm water benches and conveyance channels in addition to other engineered features where stormwater design criteria are both applicable and critical as suggested by our comments on climate. However, with the exception of the Open Pit outflow channel, which according to the CCP is designed to carry the 100-year, 24-hour storm event, the CCP does not identify the storm design criteria for the reclamation that has been completed or for reclamation that is planned.</p> <p>Recommendations: The MMD Director should recognize that even current design standards such as 1 in 100-year storm events are grossly inadequate to protect public safety as well as to ensure the mining facilities are not impacted by stormwater resulting in both property loss as well as potential water quality impacts as well as impacts to reclamation post-closure. Executive Order 119887 was issued "as part of a national policy on resilience and risk reduction" consistent with the President's Climate Action Plan. The resulting Federal Flood Risk Management Standard defines one way of determining a floodplain as "(iii) the area subject to flooding by the 0.2 percent annual chance flood." Given that New Mexico's existing stormwater design criteria are antiquated with regard to climate change considerations, we recommend that the NMED recognize a 500-yr storm event standard as a measure of risk reduction related to both public and worker safety as well as minimization of property damage. The MMD Director should require at least a 200-yr/24-hour storm event and preferably a 500 yr/24-hour storm event and should adopt it as an executive action given the department's direct experience with the current standard being inadequate and the Department's own frequent observations of significant stormwater events exceeding the 100-yr standard at mine sites in New Mexico.</p>	LAC acknowledges that this comment is directed to the New Mexico Mining and Minerals Division.

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		<p>However, we would also note that as we have previously commented, others have found it is not possible to quantify the future effects of climate change on flood flows with any confidence, and instead have recommended an uplift of 10% to 20% applied to design storms or peak flows in response to this uncertainty (EGBC, 2018)8. If the agencies were to address the matter of climate change proactively in a similar manner, they would at least adopt the use of a 200-yr 24-hr flood event going forward as the stormwater design standard for CCPs.</p>	
22	Public Comment	<p>10. Section 5.1 Open Pit According to the CHM CCP, “As required by the NMMA Rules, the revised surface-water standards in 20.6.4.99 NMAC will replace the current AP-27 surface-water standards (see Appendices E and H). One of the Open Pit waterbody AP-27 performance standards will be meeting surface water quality standards for wildlife specified in 20.6.4.99 NMAC. According to JSAI (2020 revised 2021), included as Appendix E to the CCP, “The January 2021 open pit water-quality results meet the revised surface water quality standards for wildlife, livestock, and secondary contact.” The suggestion that the revised surface-water standards in 20.6.4.99 NMAC will replace the current AP-27 surface-water standards “as required by NMMA Rules” is not correct. As noted in Appendix E, Open Pit evaluation report by JSAI (2021), based on correspondence from the NMED (2021), AP-27 will be updated to include applicable surface-water standards related to 20.6.4.99 NMAC.</p> <p>Table 3 from JSAI 2021 shows the original surface-water standards contained in the 2002 AP-27 and as presented in Appendix E. As indicated in Table 3, JSAI 2021 did not specifically address the open pit water quality results that do not meet the AP-27 groundwater discharge standards for sulfate and TDS. The following should also be noted:</p> <ul style="list-style-type: none"> • The AP-27 groundwater discharge standard for arsenic is 0.01 mg/L however the Open Pit water body January 2020 analysis apparently had a detection limit of 0.125 mg/L, rendering a comparison of the results as to the AP-27 groundwater discharge standard impossible. • As noted in the table the Open Pit water body data is lacking a chromium VI analysis, and the chromium analysis had a detection limited of 0.030 mg/L, making a comparison to the Limited Aquatic Life – Acute Standard of 0.016 mg/L impossible. • The Limited Aquatic Life – Acute Standard for copper is 0.05 mg/L as compared to the Open Pit water body analysis value of 0.04 mg/L. This means the copper concentration is presently just 0.01 mg/L from equaling the standard. <p>The AP-27 groundwater discharge standard for lead is 0.002 mg/L however the Open Pit water body January 2020 analysis apparently had a detection limit of 0.0075 mg/L, rendering a comparison of the results as to the AP-27 groundwater discharge standard impossible.</p> <ul style="list-style-type: none"> • As noted in the table the Open Pit water body data is lacking a silver analysis, making a comparison to the Limited Aquatic Life – Acute Standard of 0.035 mg/L impossible. 	<p>Open Pit water quality standards are actively addressed under NMED AP-27 jurisdiction and described in the CCP supplemental information packet. Please note that NMED AP-27 contains water quality triggers for water treatment requirements.</p>

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		<p>Recommendations: The expectation in a CCP is that it will describe how standards will be maintained and not simply suggest that if standards are exceeded, additional water treatment will be performed as necessary. An Abatement Plan or approach based on meeting standards, and taking a “wait and see” approach and allowing for standards to be exceeded and then implementing mitigation measures once again, is not an abatement plan but instead the acceptance of exceedances of standards in perpetuity, if only “periodically.” And this approach ensures that at some point in the future when the company no longer exists, the ability of the agencies to maintain standards even using a reactive approach will be tenuous, as there is no reasonable basis upon which to predict how often periodic treatment will be needed.</p> <p>The CHM Open Pit lake will, without question, act as an evaporative sink and result in evapo-concentration of the contained constituents over time. In addition, it will continue to receive contaminants in stormwater to varying degrees depending on source controls and pit wall conditions among other factors. While it may not be necessary to conduct water treatment operations continuously in the future, until it can be demonstrated through actual water quality results for a significant period of time, such as for a period of 25 years, the assumption should be that annual water treatment will continue to be necessary.</p> <p>Additionally, the use of an Adaptive Management Planning approach should be used that includes triggers and actions intended to prevent future exceedances and applied immediately. As noted, the copper concentration in particular is 80% of the present standard. Using copper as an example, based on the Limited Aquatic Life – Acute Standard for copper of 0.05 mg/L being the most restrictive standard, the following protocols should be followed:</p> <p>A. If the pit lake analysis is greater than 75% of the standard or 0.04 mg/L copper, water treatment is commenced,</p> <p>B. Water treatment is continued until the pit lake analysis is less than 25% of the standard or 0.02 mg/L copper.</p> <p>As suggested, our recommendation is that protocols similar to these would be applied for all applicable constituents over the next 25 years. Once the data from that period are evaluated, the longer-term requirements to prevent future exceedances, including whether periodic treatment will be adequate and how frequently, can be more confidently estimated. In the meantime, a conservative approach should be taken that assumes annual water treatment of the pit lake will be required for the foreseeable future.</p>	
23	Public Comment	<p>11. Section 7.0 POST-RECLAMATION MONITORING AND MAINTENANCE According to the CHM CCP, the post-reclamation monitoring program will include:</p> <ul style="list-style-type: none"> ➤ Open Pit water quality (AP-27 and NMAC); ➤ vegetation success; ➤ erosion control; 	

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		<p>➤ drainage channel and diversion structure monitoring; ➤ slope stability; ➤ wildlife monitoring, including inspection for damage from burrowing animals; ➤ site security; and ➤ routine inspections of all reclaimed units to assess their condition and to detect any unusual conditions.</p> <p>The CCP goes on to suggest that the monitoring period will be 12 years except for water-quality remediation under DP-55, and the post-reclamation monitoring program is further described in the Updated Contingency Plan. The following is noted in the Updated Contingency Plan:</p> <p>3.2 Contingency Plan CHP-1</p> <ul style="list-style-type: none"> • The approach describes reacting to water quality exceedances after they occur. This approach practically guarantees water quality standard exceedances will occur in the future, until corrective actions are taken, and does not prevent or even minimize water quality exceedances. • The approach is exclusively based on exceedances of standards for wildlife use, or downgradient water quality, but not the actual pit lake water quality itself. • 3.3 Performance Standard CHP-2: Open Pit Hydrological Model • As noted, steady-state Open Pit water levels are predicted to range between the present level of approximately 6,800 to as much as 6,840 ft above mean seal level (amsl). The contingency plan would conduct a hydrologic investigation if the Open Pit lake water levels rise above 6,840 ft. The hydrogeologic model has previously been revised in 1999, 2001, 2010, and 2020. <p>Review of the CCP and Updated Contingency Plan did not indicate any plans for monitoring and maintenance of any features beyond 12 years.</p> <p>Recommendations: The Contingency Plan for the CHM CCP long-term monitoring and maintenance should be based on a preventative approach that would result in the objective of no future exceedances of applicable water quality standards as previously described in these comments. Consistent with that approach, it is also recommended that if the pit lake level reaches 6,820 ft amsl a hydrologic investigation be conducted as described, including to ascertain whether the pit level is likely to rise above 6,840 ft. It is also recommended that LAC and the agencies consider whether a better approach overall to long-term management and prevention of water quality exceedances might be to maintain the current pit lake water level by treating and discharging as required.</p> <p>As suggested in NMED’s comments contained in MMD’s letter to LAC dated October 25, 2022 concerning Agency technical comments on the CHM CCP, the CCP should describe a long-term post-reclamation monitoring and maintenance program that assumes at least 100 years. This also needs to be reflected in the</p>	<p>Please note that the updated Contingency plan calls out the “appropriate State agency” on page 1 of CCP Appendix B. Section 3.0 CUNNINGHAM HILL OPEN PIT is specific to NMED AP-27</p> <p>Please note the Contingency plan is in addition to proactive corrective actions specified in NMED AP-27 such as source controls detailed in the revised remediation plan, water quality triggers for water treatment requirements, and other details.</p> <p>Correct, long-term monitoring and plans to protect water quality are specified in NMED DP-55 and AP-27.</p> <p>Please note that these issues are addressed in NMED AP-27</p>

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		<p>cost estimate. The program should include all aspects of the site related to water quality which is not exclusive of maintaining revegetation or source controls, and should include and address in sufficient detail all the items identified during the 12-year period but for at least 100 years. The CHM CCP should incorporate all requirements for AP-27 regardless of whether the cost estimate for AP-27 is performed separately.</p>	<p>LAC has provided the NMED AP-27 and DP-55 required financial assurance for a 100-year period. The CCP has incorporated components of renewed NMED DP-55 and current NMED AP-27 to the extent required by 19.10.5 NMAC.</p>
24	Public Comment	<p>12. Financial Assurance Cost Estimate The comments from NMED and MMD concerning financial assurance in MMD's letter to LAC dated October 25, 2022 have been noted. It is our intention to provide more detailed comments specific to the financial assurance estimates upon LAC's response to MMD and NMED and their providing a separate cost estimate for AP-27. As suggested in our previous comments, the inclusion of tasks in the CCP and provisions in the financial assurance cost estimate for long-term monitoring, maintenance and water treatment is necessary to address the majority of the issues that have been raised herein. In particular the requirement from NMED to consider long-term costs for activities for 100 years is significant in that the use of that time period is intended to address long-term costs that could actually occur over hundreds, thousands and even tens of thousands of years into the future if present circumstances were to be applied. The recognition that the CHM is not a walk-away proposition is important in that it signifies that in order to ensure that the liability for conducting the necessary future monitoring, maintenance and water treatment tasks does not ultimately become a public/taxpayer liability, a cash or equivalent trust fund based on conservative fiscal assumptions relative to financial assurance must be established. This means that in addition to ensuring the cost estimate is accurate, the estimate should also be performed assuming a longer time period such as 500-years, and a using a conservative assumption as to future inflation and interest, and assume a low net discount rate, such as 1%. How this approach affects the amount of financial assurance is shown in Table 4.</p> <p>Depending on the Discounted Rate of Return (DROR), which is the rate of interest received on funds invested minus the inflation rate, the impact on the amount of funds estimated is significant. For a 100-year period, using this example, a 5% DROR would result in a Net Present Value (NPV) being calculated of approximately \$25M, whereas using a 3% DROR would result in a NPV of approximately \$38M, and a 1% DROR would result in a NPV of approximately \$75M. It should be noted that currently, with inflation exceeding the interest rate obtainable on typical investment funds appropriate for financial assurance, the DROR would be negative resulting in an even larger amount of financial assurance being necessary than that calculated for the 1% case.</p> <p>The impact of using a 500-year period is also demonstrated in Table 4. If a 5% DROR is used the result would be to add less than a percent to the NPV. If 3% is used the result would be to increase the amount from approximately \$38M to \$41M. However, if a conservative rate of 1% is used the NPV increases from approximately \$75M if 100 years is used to approximately \$120M if 500 years is used.</p>	<p>Please note that LAC is the property owner of the facility and surrounding land. The only remaining asset is the land and associated water rights. It is in the best interest of the property owner to retain the value of the property and associated water rights, unlike other legacy mining projects that occur on public lands.</p> <p>LAC will adhere to financial assurance requirements specified in the regulations and permits.</p>

LAC Minerals (USA) LLC Responses to Comments

on the

**Closure/Closeout Plan Update
Amendment to Application for Revision 20-1
Cunningham Hill Mine Permit No. SF002RE
February 23, 2023**

Comment Number	Reviewer	Comment	LAC Response
		Recommendation: Given that even in the most accurate financial assurance cost estimate there is inherent uncertainty, but particularly when it comes to suggesting what might happen in the future the inherent uncertainty is large, it is recommended that NMED use a longer time period such as 500-years, and a conservative assumption as to future inflation and interest, and assume a low net discount rate, such as 1%.	
25	Public Comment (The San Marcos Association)	Is there any assurance that the current pit water level is sustainable? Or might it drop, leading to increasing weathering and erosion of the pit wall?	The CHMRP open pit water body is in equilibrium with the surrounding water table, as evidenced from the last thirty years of monitoring and studies (see NMED AP-27 file reports and CCP Appendix E). Therefore, the current pit water level is sustainable.
26	Public Comment (The San Marcos Association)	The Board would like to see a financial assurance structure that will protect the site for 200 to 500 years. Please see notes in the presentation from James Kuipers, on behalf of the Friends of Santa Fe	LAC will adhere to financial assurance requirements specified in the regulations and permits.
27	Public Comment (The San Marcos Association)	Finally, the SMA is concerned that the EMNRD approach leaves out impacts on groundwater resources in neighboring and nearby properties. We heard discussion at the hearing of a separate process for the New Mexico Department of Environment to address off-site water issues. Although this process may follow the "letter of the law," it does not appear to be sufficient to protect the citizens and wildlife in the area. SMA, therefore, requests more detail on a coordinated and robust effort between the various Departments of the State of New Mexico that can suitably address groundwater related issues in this instance.	The EMNRD Mining and Mineral Division jurisdiction is for reclamation of disturbed lands and the New Mexico Environment Department (NMED) Surface Water Quality Bureau and Groundwater Quality Bureau jurisdiction relates to all things water quality. As part of the updated CCP process, all State Agencies provide comments to "coordinate and robust effort between the various departments". On this particular project, the NMED, New Mexico Office of the State Engineer, New Mexico Department of Game and Fish have all provide significant input regarding the protection of the resources of the State, privately owned CHMRP, adjacent and surrounding property owners. In particular, CHMRP groundwater are fully under the jurisdiction of NMED permits DP-55 and AP-27. There are plans for long-term monitoring to ensure groundwater quality impacts are limited to the site, are minimized, and eventually completely mitigated.
28	Public Comment (Madrid Landowners Association)	The MLA agrees this should not be a walk-away project. The revised CCP should call for long-term regularly scheduled post-reclamation monitoring and maintenance program for the next 100 years, together with adequate financial assurance for the next 100 years to fund such a maintenance program rather than mitigate-after-occurrence approach, as well as regularly scheduled monitoring of water quality.	LAC appreciates and shares your concern, which is addressed by NMED issued permits for AP-27 and DP-55. These permits require 100 years of closure (post-reclamation) monitoring and maintenance. Furthermore the Financial Assurance for DP-55 and AP-27 covers cost for the next the 100 years.
29	Public Comment (Madrid Water)	Madrid Water agrees this should not be a walk-away project. The revised CCP should call for long-term regularly scheduled post-reclamation monitoring and maintenance program for the next 100 years. Madrid Water supports a regularly scheduled maintenance program rather than mitigate-after-occurrence approach. As well as regularly scheduled monitoring of water quality. Madrid Water also requests adequate financial assurance for the next 100 years.	Please see response to comment 28