RIO GRANDE RESOURCES CORPORATION

November 10, 2023

Mr. Clinton Chisler
Uranium Reclamation Coordinator
Mining Act Reclamation Program
Mining and Minerals Division
New Mexico Energy Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Responses to "Other Agencies" Comments on *Closeout/Closure Plan Mt. Taylor Mine,* Rio Grande Resources Corporation, Mt. Taylor Mine, Cibola County, New Mexico, Permit Tracking No. CI002RE

Dear Mr. Chisler,

Rio Grande Resources Corp. (RGR) received a letter, dated May 17, 2023, from the Mining and Minerals Division (MMD) of the Energy, Minerals and Natural Resources Department requesting responses to comments on the Closeout/Closure Plan Mt. Taylor Mine (CCP) dated June 2022 and Supplemental Submission of the 2022 Cost Estimate, dated June 18, 2022. The letter also requested RGR provide responses to comments provided by the New Mexico Environment Department (NMED) and MASE which were also included with the above referenced letter.

RGR respectfully submits its responses to the "Other Agencies" comments included with the MMD comment letter dated May 17, 2023. The "Other Agencies" include Mining Environmental Compliance, Surface Water Quality Bureau, Air Quality Bureau and MASE.

RGR previously responded to comments by New Mexico Office of State Engineer (NMOSE) and the New Mexico Department of Game and Fish (NMDGF). A supplemental information packet to NMOSE's comments is being sent to MMD via mail, due to its large volume of materials. This supplemental information packet contains additional information to address NMOSE's comments.

If you have any questions, please contact me at (505) 287-7971 or by email at bruce.norquist@ga.com. A hard-copy of this document is also being sent by mail.

Sincerely,

Bruce Norquist
Facilities Manager, Mt. Taylor Mine
Rio Grande Resources Corporation

cc: Ms. Anne Maurer, NMED-MECS, via email

MEMORANDUM

DATE: September 7, 2022

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: Emily Toczek, Watershed Protection Section, Surface Water Quality Bureau, New Mexico Environment Department

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

SUBJECT: **Request for Review and Comment, Mt. Taylor Mine and Mill, Updated Closure/Closeout Plan, Revision 22-1, Cibola County, New Mexico Mining Act Permit No. CI002RE, Revision 22-1**

On July 14, 2022, the New Mexico Environment Department (NMED)-Surface Water Quality Bureau (SWQB) received a request for comments regarding the above referenced application. Rio Grande Resources (RGR) Corporation is requesting to expand the disposal cell from 11.5 acres to 25 acres and update the Closeout/Closure Plan (CCP). The SWQB prepared the following comments pursuant to §19.10.505 and 506 New Mexico Administrative Code (NMAC):

SWQB Comment #1 – Update information regarding Outfall 001

Page 16 of 614 of the June 2022 Revised Closeout/Closure Plan says:

> **"A study by RGR (RGR 2013b, Appendix E) found that uranium levels in soil and ground water downstream from the Outfall 001 are very low, below human health limits, indicating that previous mine water discharge has not contaminated the soil or ground water."**

The SWQB recommends updating this statement with the subsequent 2015 report titled "Soil and Water Sampling and Testing Water and Sediment Impoundment Locations Downstream of Mt Taylor Mine Water Outfall 001" submitted by RGR which found:

> **"Of the water samples tested, only LPV-02 [Laguna Polvadera] had uranium above the ground water standard for human health (20.6.2.3103 (A,B)). LPV-02a contained concentrations of sulfate and total dissolved solids above the NMED's human health standard, as well."**

The 2015 report concludes that the highest concentrations of uranium were found in the top foot of soil. The SWQB recommends that these areas be included in the Revised Closeout/Closure Plan as appropriate.

RGR's response:

RGR acknowledges SWQB's comment and will consider the recommendations made. The area downstream of Outfall 001 requires additional study. The 2015 study and report were inconclusive in that origin and extent of potential contamination was not identified. The study was not a proper sampling design, but more of an initial investigative study.

RGR considers the drainage north of Outfall 001 an affected area. Because previous studies have not properly identified the origin or extent of potential contamination, RGR will perform additional studies of the drainage to investigate the potential effects of mine water discharge flowing down the drainage. RGR will add this area to its list of affected lands in the final revisions of the CCP.

SWQB Comment #2 – Update information regarding Clean Water Act Sections 401 and 404

Page 17 of 614 of the June 2022 Revised Closeout/Closure Plan says:

> **"A Clean Water Act Section 404 permit would be required only if the amount of riprap placed will be more than one cubic yard per running foot or more than 500 feet long (40 CFR 232.3). The closeout/closure design volumes are below these limits. However, if design modifications cause these limits to be exceeded, the work could be done under the Nationwide Permit #13 (Jean Manger, Albuquerque COE office, telecom (4/23/98), which requires a Joint Application for Department of the Army Permit and NM Water Quality certification."**

The Clean Water Act (CWA) information included in the Revised Closeout/Closure Plan should be updated. For example, Title 40, Code of Federal Regulations, Part 232.3 applies mainly to agricultural exemptions. Nationwide Permit 13-Bank Stabilization (NWP 13) has a "notification" requirement that applies to certain projects, such as those projects that exceed 500 feet in length. However, a regulated activity that does not require the U.S. Army Corps of Engineers (USACE) to be notified does not mean that the project does not require a permit. Such projects must still follow all general and regional conditions as well as certifying conditions under CWA Section
401. The SWQB recommends that RGR Corporation contact the USACE-Albuquerque District regarding potential CWA Section 404 requirements regarding the reclamation activities described in the Revised Closeout/Closure Plan.

RGR's response:

RGR will update the appropriate section(s) in the final CCP revision during the technical review period. RGR will communicate with USACE (Albuquerque) when detailed designs for the diversion ditches are prepared.

Comment #3 – Use of crushed concrete

Crushed concrete has the potential to leach chemical contaminants including heavy metals, affect the pH of natural waters, and cause deposits of suspended solids or precipitates in downstream waterways. The Revised CCP states that "approximately 2,500 cubic yards will be crushed, screened, and applied on the WRP [waste rock pile] and adjacent diversion channel for erosion protection." The SWQB has no objection to recycled concrete aggregate being used to stabilize the waste rock pile; however, crushed concrete must not be used in surface waters of the state where there is a potential to negatively impact state water quality. Diversion channels that have been created in former arroyos or combine with other surface or subsurface waters are included under the definition of "surface water(s) of the state" (20.6.4.6 NMAC). Furthermore, the USACE-Albuquerque District's Regional Condition 6 includes broken concrete as unsuitable fill material, and NMED's CWA Section 401 Water Quality Certification for NWP 13 includes broken concrete as an inappropriate construction material for surface waters. Therefore, alternatives to broken or crushed concrete, such as basalt boulders, are required for waters of the U.S. and waters of the state.

RGR's response:

RGR will modify the 2022 CCP to propose an alternate rip-rap material to broken concrete in the diversion channels. (e.g.: basalt rip-rap). RGR is presently working with a licensed professional engineer to redesign and reconstruct the diversion ditches and will defer to the professional engineer's judgement on the use or needs of rip-rap in the diversion channels.

Comment #4 – Additional monitoring and maintenance information

Page 599 of 614 of the June 2022 Revised Closeout/Closure Plan includes post-closure monitoring and maintenance requirements. The SWQB recommends that Section 2.2.2 "Stormwater and Erosion Monitoring Reporting" provide more specific information regarding the specific water quality sampling that will be conducted. The SWQB also recommends that a monitoring and maintenance plan be developed for the diversion channels and Marquez Arroyo that takes into account the lifespans of the engineered structures, including the materials in the structures. Given the modified arroyos, the reliance on engineering controls to stabilize Marquez Arroyo and the diversion channels, and the close proximity between the expanded disposal cell and the waterways, additional maintenance needs beyond 100 years should be considered in the Revised Closeout/Closure

Plan.

RGR's response:

RGR acknowledges SWQB's recommendations. MMD and NMED have both addressed this concern in their comments. MMD has stated that Rev 22-1 will have specific erosion monitoring requirements. NMED requires some frequency of long-term erosion monitoring for the period of time beyond the 12-year reclamation period. RGR will continue to work with MMD and NMED on developing a long-term monitoring and maintenance plan as the permits advance through the renewal process.

MEMORANDUM

DATE: September 12, 2022

TO: Anne Maurer, Mining Act Team Leader, Mining Environmental Compliance Section, NMED

FROM: Sufi Mustafa, Staff Manager, Air Dispersion Modeling and Emission Inventory

Section, Air Quality Bureau.

Request for Review and Comment, Mt. Taylor Mine and Mill, Updated Closure/Closeout Plan, Revision22-1, Cibola County, New Mexico Mining Act Permit No. CI002RE

The New Mexico Air Quality Bureau (AQB) has completed its review of the above-mentioned mining project. Pursuant to the New Mexico Mining Act Rules, the AQB provides the following comments.

Details

Rio Grande Resources Corporations, at the request of EMNRD and NMED, submitted an updated Closeout/Closure Plan (CCP). The proposed plan provides cost estimate of ground water abatement plan and provides long term ground water monitoring proposal.

Air Quality Requirements

The New Mexico Mining Act of 1993 states that "Nothing in the New Mexico Mining Act shall supersede current or future requirements and standards of any other applicable federal or state law." Thus, the applicant is expected to comply with all requirements of federal and state laws pertaining to air quality.20.2.15 NMAC, *Pumice, Mica and Perlite Processing.* Including 20.2.15.110 NMAC, *Other Particulate Control:* "The owner or operator of pumice, mica or perlite process equipment shallnot permit, cause, suffer or allow any material to be handled, transported, stored or disposed of or a building or road to be used, constructed, altered or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne."

Paragraph (1) of Subsection A of 20.2.72.200 NMAC, *Application for Construction, Modification, NSPS, and NESHAP - Permits and Revisions,* states that air quality permits must be obtained by:

"Any person constructing a stationary source which has a potential emission rate greater than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico

Ambient Air Quality Standard. If the specified threshold in this subsection is exceeded for any one regulated air contaminant, all regulated air contaminants with National or New Mexico Ambient Air Quality Standards emitted are subject to permit review."

Further, Paragraph (3) of this subsection states that air quality permits must be obtained by:

"Any person constructing or modifying any source or installing any equipment which is subject to 20.2.77 NMAC, *New Source Performance Standards,* 20.2.78 NMAC, *Emission Standards for Hazardous Air Pollutants,* or any other New Mexico Air Quality Control Regulation which contains emission limitations for any regulated air contaminant."

Also, Paragraph (1) of Subsection A of 20. 2.73.200 NMAC, *Notice of Intent,* states that:

"Any owner or operator intending to construct a new stationary source which has a potential emission rate greater than 10 tons per year of any regulated air contaminant or 1 ton per year of lead shall file a notice of intent with the department."

The above is not intended to be an exhaustive list of all requirements that could apply. The applicant should be aware that this evaluation does not supersede the requirements of any current federal or state air quality requirement.

Fugitive Dust

Air emissions from this project should be evaluated to determine if an air quality permit is required pursuant to 20.2.72.200.ANMAC (e.g.10 lb/hour or 25 TPY). Fugitive dust is a common problem at mining sites and this project will temporarily impact air quality as a result of these emissions. However, with the appropriate dust control measures in place, the increased levels should be minimal. Disturbed surface areas, within and adjacent to the project area, should be reclaimed to avoid long-term problems with erosion and fugitive dust. EPA's *Compilation of Air Pollutant Emission Factors, AP-42, "Miscellaneous Sources" lists* a variety of control strategies that can be included in a comprehensive facility dust control plan. A few possible control strategies are listed below:

Paved roads: covering of loads in trucks to eliminate truck spillage, paving of access areas to sites, vacuum sweeping, water flushing, and broom sweeping and flushing.

Material handling: wind speed reduction and wet suppression, including watering and application of surfactants (wet suppression should not confound track out problems).

Bulldozing: wet suppression of materials to "optimum

moisture" for compaction. Scraping: wet suppression of

scraper travel routes.

Storage piles: enclosure or covering of piles, application of surfactants.

Miscellaneous fugitive dust sources: watering, application of surfactants or reduction of surface wind speed with windbreaks or source enclosures.

Recommendation

Completion of closeout/closure measures will reduce truck traffic. Revegetation of disturbed ground and erosion protection will reduce fugitive dust.

The Air Quality Bureau has no objection to the permit modification request.

This written evaluation does not supersede the applicability of any forthcoming state or federal regulations.

If you have any questions, please contact me at 505 629 6186

RGR's response:

RGR acknowledges the NMED Air Quality Bureau's comments, and will comply with all applicable regulations. With regard to fugitive dust, RGR will apply water to all construction zones that have the potential to generate fugitive dust. RGR will evaluate the site for other potential sources of dust and apply controls as it identifies needs. RGR does not plan to have any stationary sources at this time, but will obtain permits if plans change.

Electronic Transmission

MEMORANDUM

Date: April 14, 2023

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

Through: Anne Maurer, Mining Act Team Leader, Mining Environmental

Compliance Section (MECS) From:Andrew Stocker, MECS
Alan Klatt, Surface Water Quality
Bureau(SWQB) Sufi Mustafa, Air
Quality Bureau (AQB)

Subject: **New Mexico Environment Department (NMED) Comments, Updated Closure/Closeout Plan, Revision 22-1, Mt. Taylor Mine, Rio Grande Resources, Cibola County, New Mexico, New Mexico Mining Act Permit No. CI002RE**

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on July 14, 2022 requesting that NMED review and provide comments on the above-referenced MMD permitting action. Pursuant to the Mining Act, the Mt. Taylor Mine is is a regular existing mine permit. MMD requested comments on the application within 60 days of receipt of the request for comments. NMED requested numerous extensions to submit comments by April 10, 2023. NMED has the following comments.

Background

Rio Grande Resources Corporation (RGR) submitted an Updated Closure/Closeout Plan (Updated CCP) to MMD and NMED, which includes a proposal to expand the on-site waste disposal cell. The Updated CCP addresses full site closure of all facilities including the existing waste rock pile/disposal cell, two shafts, multiple buildings, and water management structures that are not needed for groundwater abatement

activities. RGR also is proposing to expand the waste disposal cell up to 13.5 additional acres for a total of 25 acres for the entire disposal cell. The proposed expansion is to accommodate additional impacted materials identified on-site including soil, construction debris, headframes, pipelines, etc.

Air Quality Bureau

The Air Quality Bureau comments are attached.

Surface Water Quality Bureau

The Surface Water Quality Bureau comments are attached.

Mining Environmental Compliance Section (MECS)

The MECS has the following comments:

1. **RGR has submitted an application for renewal and modification of the discharge permit for the Mt. Taylor Mine (DP-61). The application materials that are being reviewed by NMED includes the Updated CCP. Technical review of the application and Updated CCP is ongoing and NMED will provide comments directly to the applicant as part of the permit renewal process and copy MMD.**

   RGR's response:

   RGR acknowledges NMED's comments.

2. **MECS is not providing comments on the cost estimate until comments on the Updated CCP are addressed as they may have an impact on the overall closure costs.**

   RGR's response:

   RGR acknowledges NMED's comments.

3. **Section 2.3.1, Pg. 9 of CCP – RGR indicates that runoff from the east and north slopes of the Waste Rock Pile now collects in a culvert system that discharges to the south storm water retention pond. Drawing CL-14 does not clearly show how stormwater is routed. Please indicate through flow arrows and descriptions how stormwater is routed and where the culvert systems are located.**

RGR's response:

Please see the attached drawing titled "NMED-Cmnt-3-WRP Stormwater Routing". This drawing shows the basic stormwater flow paths for the site after final grading and is a modification of Drawing CL-14. The culvert system is highlighted by a heavy pink line. A drainage channel or ditch is shown by a heavy red line.

Stormwater that impinges on the disposal cell flows in four directions, all leading to the South Stormwater Pond (SSWP). The WRP/disposal cell (WRP) is designed to produce sheet flow on its slopes. Stormwater that impinges on the east slope of the disposal cell will flow down the slope (arrows) until it reaches a drainage ditch at the toe against the access road. At about the middle of the access road, nearly in line with the peak of the disposal cell the road crowns and slope down to the north and south. Stormwater flowing off of the east slope will be divided, one path directed to the south and one path to the north. The water flowing off of the slope will collect in a ditch or trough (heavy red line) running parallel with the road. Once water reaches the southern end of this path, it turns westward and enter the drainage channel running along the south slope of the disposal cell. There it turns northward and flows into the SSWP.

Stormwater that flows northward along the eastern toe of the disposal cell will likewise enter a trough (heavy red line) that parallels the access road. Water flows northward along the roadway and exits the north toe line where it is directed into the culvert system inlet (heavy pink circle). Once in the culvert system (heavy pink line), water flows westward then southward towards the SSWP.

Stormwater that impinges on the north slope of the WRP flows down slope as sheet flow towards the northern toe line. One it reaches the toe, it is directed into the culvert system via an inlet (pink circle). Once in the culvert system, the water to the SSWP. All stormwater impinging on the WRP is confined by a drainage ditch, culvert or both, and is directed to the SSWP. On all but the north side, an access road forms a barrier that prevents stormwater from flowing anywhere else.

4. **Section 2.3.2, Pg. 9 of CCP – RGR states that the storm water retention structures on-site are designed to contain no less than a 100-year, 24-hour storm event and hold the water for evaporation. Based on storm patterns that have occurred in the last five years, the 100-year,24-hour design standard may not be enough to address higher frequency, longer duration storm events. NMED recognizes that the existing stormwater ponds may not be resized to hold larger precipitation events, but any proposed stormwater diversion structures should be designed based on a precipitation analysis that looks back the last 10 years. This is to ensure that the structures as designed can withstand larger storm events, thereby reducing long-term operation and maintenance on these structures.**

RGR's response:

RGR will take into consideration the storm events that have occurred over the previous 10 years when designing any newly proposed storm water diversion structures. Presently, RGR is working with a professional engineer, who specializes in floodplain design to redesign the diversion ditches. RGR has instructed the engineer to redesign the channels to accommodate a 500-year storm event

5. **Section 2.3.2, Pg. 10 or CCP – RGR states that the mine water as sampled in the 14-and 24-ft diameter shafts has concentrations of uranium and radium that slightly exceed current drinking water standards as shown in Table 2.1. To note, the mine water also exceeds 20.6.2.3103 NMAC standards for uranium, Radium-226, and Total Dissolved Solids (TDS).**

RGR's response:

RGR acknowledges NMED's comments.

6. **Section 2.4.2.2, Pg. 15 – RGR states that MWTU Pond Nos. 1, 4, 5, 6, 7, and 8 will be cleaned up and reclaimed and that the ponds will be backfilled with clean fill. It is unclear based on review of Table 4.3 and Drawings CL 07A and CL 08 what volume of impacted material remains in these ponds currently and how much clean fill will be needed for each pond. Please address and indicate how these volumetric estimates were made.**

RGR's response:

The contaminated sediments and soils contained in the MWTU pond basins have been removed and the pond basins generally meet the soil cleanup standard for the site of 6.8 pCi/g. When reactivation construction started in 2018, the first priority was to grade the WRP and establish the disposal cell, for subsequent placement of all contaminated soils generated during construction.

The next priority was to clean out and line Ponds #2 and #3. Once those ponds were operational, the remaining ponds were to be cleaned out and subsequently lined for expansion of operations. By the end of 2019, all of the contaminated sediments and soils had been removed from ponds 1, 4, 5, 6, 7, and8. At that time RGR decided it was going to begin closeout/closure activities. At the same time, the disposal cell was nearing its approved capacity due to the excessive amount of soil removed from the ponds. It was unclear whether the soils were truly contaminated (above 6.8 pCi/g) or that the excavation methods in combination with shine effects on the gamma meter contributed to the excessive

amount of soil being removed.

The pond basins were cleaned, but the hydraulic flow control structures, adjacent soils and berms of the ponds were not cleaned up. With the pond basins cleaned up, RGR's radiation consultant proceeded with a basic Final Status Survey (FSS) of the MWTU ponds, The results of the FSSs appeared to validate the belief that the pond basins met the soil cleanup criteria. These are presented in the attachments as "NMED-Cmnt-6-Pond Basin FSS Reports, 2020". The reports were not finalized because additional cleanup work needed to be performed and RGR was no longer interested in lining the ponds.

While these early FSSs were informative, they did not follow an approved plan. RGR did not get approval for it Reclamation and Post-Reclamation Radiological Work Plan until 2022. In Third Quarter 2023, RGR commissioned another radiation consultant to reassess the pond basins and verify they were indeed clean. The consultant is following the approved work plan and is performing surface gamma surveys and subsurface soil sampling and have verbally confirmed that many readings of the soils around the hydraulic flow control structures are elevated.

With that background information, the volume estimate of contaminated material reported in Table 4.3 under "MWTU Area less pond basins and Borrow Area A" incorporates all of the known contamination outside of the pond basins. Because RGR has not completed all of its planned vertical soil profiling, of the MWTU area, the number in Table 4.3 is estimated by using surface gamma scan data to define a boundary of soils that would exceed the equivalent of 6.8 pCi/g Ra-226 (cleanup standard). This area is then multiplied by a depth, based on site experience, to estimate a volume.

As far as volume estimates of contaminated soil remaining within the immediate perimeters of the ponds, the only identified contaminated materials are possibly the concrete hydraulic structures and the soils surrounding them. Applying the gamma data from the 2019 FSSs, an area was assumed and a depth applied. Presently, it is estimated the contaminated soils remaining within the MWTU ponds is approximately 4,200 cu. yds.

With regard to filling of the ponds, RGR intends to fill the ponds by grading the berms surrounding the ponds into them. Before pushing the berms into the ponds, the berm soils will be characterized to ensure there are no contaminated soils remaining. RGR does not anticipate needing external fill to achieve the surfaces shown in CL-07A and CL-08. CL-08 shows a typical cross-section of a pond and how the berm will be pushed to fill the pond. Section B shows the pond basin with surrounding berm. Section B1 shows how those berms are dozed into the ponds to fill them. Should additional material be needed to complete the filling and bring the ponds to intended topographic graded surface, additional surrounding material will be dozed into those deficient ponds. RGR envisions there is more than sufficient soil surrounding the ponds for this purpose and envisions the entirety of the MWTU area may be lowered by 1 to 2 feet.

7. **Section 2.4.4, Pg. 16 – RGR indicates that sample results from the ore stockpile are shown in Appendix D.3. Based on a review of Table 2 in Appendix D.3, it is unclear which samples are associated with specific facilities or areas. Please provide a map showing where all of the samples were taken from that correspond to the sample results shown in Table 2. In addition, please address if the ore pad soils have been characterized to date, and if so, provide the results.**

RGR's response:

A map of the samples presented in Table 2 of Appendix D.3 is attached (NMED-Cmnt-40-Fig-D-1-1-MWTU-Ponds-Map). The samples in Table 2 of Appendix D.3 were taken in 2012 as part of a characterization of the MWTU ponds. None of these samples represent the ore pad.

Note: Section 2.4.4 refers to the page in Appendix D.3 showing the chemical constituents of typical Mt Taylor ore, to demonstrate the general nature of the ore pad materials; it does not represent the ore pad materials specifically.

With regard to the ore pad soils, no ore pad study is known to have been performed. A characterization study of selected areas of the facility was performed in 2nd Quarter, 2023. In that study, a gamma survey and vertical soil profiling was performed. The data and map are in the attachment "NMED-Cmnt-7-Ore-Pad Characterization". Besides the gamma readings, the only soil element analyzed was Ra-226. While RGR awaits approval to expand the disposal cell, it intends to continue characterizing the areas around the site, to better understand the depth of contamination and improve volumetric cleanup estimates.

8. **Section 2.4.5, Pg. 17 – RGR states that upon resumption of mining operations, waste rock was to be placed on the stockpile until it reached the maximum build-out configuration as shown in Drawing Sheets CL 09, CL 10, and CL 11. Please address whether the configuration as shown in these figures is the final closure configuration for this facility.**

RGR's response:

The Waste Rock Pile (WRP) configuration shown in drawings CL 09, 10 and 11is the maximum final configuration, assuming the capacity is filled. Based on conservative estimates, the volumes of contaminated materials, currently observed around the site, are expected to be much less than the capacity of the disposal cell at final maximum build-out. RGR believes that the final footprint and volume of the disposal cell will be much smaller than the maximum build-out presented.

9. **Section 4.3.2, Pgs. 31-32 – NMED is concerned with the long-term integrity of the 14- and 24- foot diameter shafts based on the plugging plan provided in the CCP. Discussions between NMED, MMD, and the Office of the State Engineer – Hydrology Bureau (OSE) have been initiated to determine the most environmentally protective options for shaft closure. NMED recognizes that a shaft closure plan was approved in the 2013 CCP. However, this approval may have been provided given the mine was going to continue to operate, and therefore, subsequent reviews of the shaft closure plan would occur. Given that Mt. Taylor Mine is in closure, NMED and the other coordinating regulatory agencies need to determine a path forward for shaft closure that meets all of the respective agencies' requirements. If RGR obtains a plugging and abandonment variance from the OSE, NMED may require significant financial assurance to address long-term contingency measures (i.e. a robust deep well monitoring plan for a minimum of 100-years, contingency costs for water treatment in the event impacts to the Point Lookout aquifer are detected, etc.) to ensure that any groundwater impacts as a result of cross-contamination from not fully plugging and abandoning the shafts will be addressed.**

RGR's response:

RGR acknowledges the comment and intends to work with NMED and NMOSE on this matter as it progresses. Once a remediation plan is approved, RGR will provide for long-term monitoring of the deep aquifers and appropriate increases to the financial assurance according to approved plans for plugging and abandonment of the shafts.

10. **Section 4.3.4, Pg. 34 – RGR states that all building demolition debris and other scrap materials will be placed in the disposal cell. Based on a review of Tables 4.2 and 4.3, it is unclear what the volume estimates are for these materials. Please provide a volume estimate for this material.**

RGR's response:

Using the buildings listed in Table 4.2 that are not retained for the PMLU, the volume of debris, including concrete is estimated to be approximately 43,000 cu. yds. A volume reduction factor of 0.4 (multiplier for compaction effort), is applied to all of the buildings and their contents. For non-buildings, the reduction factor was between 0.8 and 1. This reduction factor represents the amount of volume the material would occupy if it were crushed.

Most of the building foundations were considered to be clean. These were to be rubblized and buried in place. Concrete that was identified as coming into contact with ore (e.g.:

production shaft, ponds, chillers) was placed in the disposal cell. Broken concrete was assumed to increase in volume, with a volume adjustment of 1.5.

11. **Section 4.3.4, Pg. 35 – RGR indicates that the treated water discharge pipeline will be removed and placed in the disposal cell. Tables 4.2 and 4.3 do not show the volume estimate(s) for this pipe. Please provide a volume estimate for the pipe and indicate if there is enough space in the disposal cell for this material.**

RGR's response:

Based on estimated discharge pipe quantities (4.3 miles of 2-feet dia. pipe) and no volume reduction, the estimated volume of the discharge pipe is approximately 2,700 cu. yds. At the proposed 25-acre footprint, the disposal cell will have more than sufficient space for the pipe.

12. **Section 4.3.4, Pg. 36 – The contaminated pond sediments and soils are proposed for placement within the disposal cell. Table 4.2 does not clearly state what the volume of this material is estimated to be. Please provide the volume of contaminated pond sediments and soils proposed for placement within the disposal cell.**

RGR's response:

This was addressed in RGR's response to Comment #6 above. To date, nearly all contaminated sediments that were in MWTU Ponds 1, 2,3, 4, 5, ,6, 7 and 8 (pond basins) have been excavated and placed in the existing disposal cell. This volume was approximately 77,000 cu. yds. The volume removed from the pond basins to achieve the soil cleanup standard for Ra-226 (6.8 pCi/g) was significantly greater than that originally estimated, and subsequently filled the existing, permitted volume of the disposal cell. The original estimated volume was based on sediment sampling performed in 2012. It should be noted that gamma readings taken during the cleanup activities may have been unduly influenced by shine, resulting in excavation of clean material that otherwise could have remained.

Once the contaminated soils from the pond had been removed, RGR's radiation consultant performed a "Final status Survey" level verification of cleanup efforts. It was found that RGR had effectively removed all contaminated sediments and soils from the pond basins ("NMED-Cmnt-6-Pond Basin FSS Reports, 2020"). These FSS's were performed before RGR had an approved Reclamation and Post Reclamation Work Plan, thus these surveys were not considered to be final.

The cleanup of the pond basins was performed in 2019, during the reactivation work in order to line the ponds for subsequent operations. In late 2019, RGR declared that it was

going to begin closeout/closure status, and nothing further was done with the ponds. Cleanup work remaining to be completed at that time involved the soils around the concrete hydraulic flow control structures.

RGR has since commissioned another radiological study (in progress) to identify areas of the pond basins (an berms) that still require cleanup and to verify the conclusions of the previous survey. Preliminary work shows that, for the most part, the soils surrounding the hydraulic flow control structures and some of the associated concrete, will require removal. To arrive at an estimated cleanup volume, the previous radiological survey results were re-examined. Based on those surveys, RGR estimates the amount of material to be removed and placed in the disposal cell is approximately 4,300 cu. yds.

13. **Section 4.4, Pg. 36 – RGR indicates that Borrow Area A will be used for clean cover, but this area may not have enough clay deposits for the engineered caps and clay liners. Please provide the volume estimate of material needed for 1) clean fill, 2) the clay liner, 3) radon barrier, and 4) cover material for the disposal cell. Please also indicate if there is sufficient material on-site within the Borrow Areas for each application as stated in Nos. 1-4 above.**

RGR's response:

1) Clean Fill volume – No clean fill is anticipated. The material will be provided as needed by grading (e.g.: MWTU ponds).
2) Clay Liner volume (full build-out): approximately 21,800 cy. Yds.
3) Radon Barrier (full build-out): Approximately 44,000 cu. yds.
4) 4) Soil Cover (full build-out): Approximately 36,600 cu. yds.

The clays in Borrow Area A were becoming sparse the last time they were excavated. Typically, the clays in Borrow Area A occur in beds, interspersed with sandy layers. Borrow Area A will need further characterization to verify if sufficient quantities of clay exist. It is believed Borrow Area A has sufficient clay for the liner material.

Any need for additional material will come from Borrow Area C, which is located within the permit area and is located north of the MWTU area.

14. **Section 4.4, Pg. 37 – RGR indicates that contaminated soils from around the remainder of the mine site (and support areas) will be placed in the disposal cell. It is unclear based on a review of Table 4.3 what the volume of material associated with the areas will be. Please provide an estimate of this material and show in Table 4.3.**

RGR's response:

The estimated volume of this contaminated soil, generated from the site upon closure is: 294,400 cu. yds. Please see the updated Table 4.3 (attached as "NMED-Cmnt-Table-4-3-Update).

15. **Section 4.4.1 Pg. 38 "A clay liner, consisting of not less than 1.0 ft. of compacted clay soil (CL, CH, or SC soils per USCS classification) will be constructed under the disposal cell to provide additional protection for ground water."— Please provide the technical basis for the proposed1.0 ft compacted clay layer and how a 1.0-foot clay liner will be environmentally protective, specifically for groundwater protection.**

RGR's response:

A clay liner serves to provide a firm base for placement of contaminated sediments and soil but also to provide an additional barrier to infiltration of pore water from the contaminated materials to the vadose zone of native ground below. Because the contaminated materials will be placed dry and then covered with two feet of clay and two feet of loam, creating an evapotranspiration cover protecting the contaminated materials from infiltration, there should be no saturation with the contaminated materials that could reach the clay liner. One foot is the minimum thickness of clay that can be placed and compacted with large earthwork equipment.

16. **Section 4.4.1 Pg. 38 "Additional capacity is available by excavating trenches within the disposal cell footprint and below existing grade, providing space for disposal of pipe, structural steel, broken concrete, machinery and other materials that are not readily crushed or easily compacted. Once these materials are placed in the trenches, they will be encapsulated in cementitious flowable fill. When the flowable fill has set to a solid, additional lifts of contaminated materials can be placed within the disposal cell."— It is unclear how this material will be placed on top of the one-foot clay liner without compromising it. Please describe in more detail how the integrity of the liner will be maintained by placement of non-waste rock or impacted soil within the proposed cell. Please describe how this material will be 100% encapsulated by cementitious fill and if considerations for cement degradation over time were made as part of this design. Please describe how the material overlaying the cemented fill will be placed and compacted to ensure that subsidence will not occur.**

RGR's response:

RGR will place a "bedding" layer of compacted, contaminated soil, before any demolition debris is placed within the disposal cell. Once a sufficient protective cushion layer is placed on top of the liner, mine debris will be gently "placed" on top by loader or excavator clam shell bucket or similar grasping equipment, not dumped or allowed to free fall. Initially, small, non-angular pieces will be placed, such as piping or flat sheeting, with care to not allow sharp angular pieces to pierce into the protective layer. Once mine debris is placed, the void spaces will then be filled with cementitious flowable fill (flowfill). Cementitious flowable fill is a high-water content material that easily flows into void spaces which minimizes future settlement.

Subsequent layers of contaminated soils will be placed in lifts above the mine debris/flowfill layer. Contaminated soils are placed in the disposal in a dry state and compacted to densify the material.

There is no positive method to ensure 100% encapsulation. Encapsulation in the statement in section 4.4.1 was poor choice of wording. The intent of the flowfill is to fill void space to reduce future settlement, not isolation of the materials. Flowfill is not intended as a structural component of the disposal cell, and degradation of the cement component is not an important factor to any design.

17. **Section 4.4.1, Pg. 38 – NMED understands that Homestake Mining Company performed a similar method of placement of building debris, pipe, broken concrete, machinery, etc. and then filling with cementitious flowable fill at the Homestake Mill. Please indicate if RGR has communicated with Homestake in regards to any lessons learned during that process and if the method has held up through time.**

RGR's response:

RGR has communicated with Homestake, but only at a precursory level. RGR intends to meet with them regarding their experiences with cementitious flow fill and placement of debris before RGR begins its project.

Dr. Alan Kuhn, PE, RGR's engineer of record, designed and oversaw the construction of the Homestake Mill demolition debris disposal pit. Accordingly, there has been no observed subsidence above the debris pits since constructed in 1993-1994.

18. **Section 4.4.1, Pg. 39 – NMED will not allow any asbestos containing material to be disposed of on-site. All asbestos containing material needs to be characterized and properly disposed of at a facility that is permitted to accept this type of material.**

RGR's response:

RGR acknowledges the comment and will not dispose of asbestos containing material in the disposal cell. Asbestos-containing materials will be disposed of at a properly permitted offsite facility.

19. **Section 4.4.1 pg. 39 "In addition to its function as a barrier to release of radon from the wastes, the soil cover will serve other functions – a barrier to infiltration of water (runoff and direct rainfall), erosion protection, and a growth medium for vegetation. Extensive research and experience with uranium mill tailing covers indicates that an appropriately designed soil cover accomplishes all three objectives (NRC 2010)." – It is unclear if the borrow material as proposed will be erosion resistant and if it has suitable water holding capacity to be used as a store-and- release cover. Please indicate if hydraulic conductivity, particle size distribution, % rock fragment, % fine grain material analyses, or any other soil characterization has been performed on the borrow material. If this information is available, please provide the results. Based on the limited data submitted in the CCP on the borrow material, please address how the proposed cover system will limit net infiltration through the waste material, resist erosion, and if it is suitable for a self-sustaining ecosystem.**

RGR's response:

Testing of the borrow materials has been conducted for hydraulic conductivity, particle size distribution, and other soil characteristics. Please refer to the attached file titled "MMD-Response No 16--Earthwork -Hydraulic-Conductivity" which contains tests results of the soil characterizations. Also please refer to the following for additional information on the soil characteristics:

- Appendices D.1, S.3 and D.4 of the CCP,
- CONSTRUCTION QUALITY CONTROL DATA REPORT, DISPOSAL CELL LINER, MT TAYLOR MINE, FEBRUARY 2020

Data contained in these references support the designs of the waste pile and disposal cell cover systems. The two-layer cover design is standard in the industry for evapotranspiration performance in semi-arid and arid environments. The upper layer of loam has hydraulic conductivities in the range of 10-4 cm/sec that allow infiltration of water to encourage vegetation and provide a buffer against desiccation of the underlying clay layer, which is the medium that attenuates radon flux and blocks further infiltration.

The clays used in the radon barrier have hydraulic conductivities in the 10-5 to 10-7 cm/sec, as determined by DBSA soils lab and will inhibit migration of water into the contaminated soils below.

Erosion resistance is not a single parameter but is achieved by a combination of cover properties, cover slope and length, degree of compaction, vegetative cover, and added protection with rock mulch, and other material such as straw, rock mulch, riprap, wattles, and fabric blankets. Erosion control design will be developed when the final configuration of the disposal cell is determined, but will incorporate these concepts.

The Borrow Area soils are mostly classified as "loam". MMD has specified that is the type of soil for RGR to use in the growth media covers.

20. Section 4.4.1, Pg. 39 – The U.S. Nuclear Regulatory Commission (NRC) published a report titled *"Evaluation of In-Service Radon Barriers Over Uranium Mill Tailings Disposal Facilities"* (Report) in March of 2022. The Report addresses the long-term performance of radon barriers at reclaimed uranium mill tailing impoundments. NMED recognizes that the disposal cell is for mine waste and not tailing, but the same principles apply for uranium mine waste. Based on the evaluation in the Report, there are multiple factors that may affect the performance of radon barriers including roots penetrating the radon barrier and the long-term moisture content of the clay (or low hydraulic conductivity material) used to construct radon barriers. Based on the cover design proposed, it is not clear what the hydraulic properties of the radon barrier and top vegetative cover will have. Please indicate if any hydraulic testing has been performed (i.e.: hydraulic conductivity, permeability, soil water characteristic curves, rock fragment, % fines, particle size distribution, etc.) for the proposed radon barrier material and the vegetative cover. Please provide this data if available. RGR needs to ensure that the radon barrier will be protective over time and meets the minimum recommendations found in NUREG-7028.

RGR's response:

Hydraulic testing of the Borrow Area soils has been performed. Please refer to the response and attached data of Comment #19 above. Also attached are hydraulic conductivity tests for the radon barrier of the lower west slope of the waste rock pile, placed in 2018 ("NMED-Cmnt-20-Radon-Barrier") and hydraulic conductivity tests performed on materials from Borrow Area A and B in 2021, which correspond to the placement of the radon barrier and growth media covers over the disposal cell in late 2020 ("NMED Cmnt-20-Disposal Cell Cover, 2020"),

Data contained in Appendices D.1, S.3 and D.4 of the CCP, and CONSTRUCTION QUALITY CONTROL DATA REPORT, DISPOSAL CELL LINER support the designs of the waste pile and disposal cell cover systems. The two-layer cover design is standard in the industry for evapotranspiration performance in semi-arid and arid environments. The upper layer of loam has hydraulic conductivities in the range of 10-4 cm/sec that allow

infiltration of water to encourage vegetation and provide a buffer against desiccation of the underlying clay layer, which is the medium that attenuates radon flux and blocks further infiltration.

21. **Section 4.4.3, Pg. 40 – Please indicate if a portion of the expanded disposal cell will be left uncovered/un-reclaimed to accommodate materials to be addressed when abatement activities are complete (i.e., pond sediments and liners, any remaining impacted material as a result of abatement activities/closure). In addition, please indicate this on a figure to show where this material will be placed.**

RGR's response:

RGR does not intend on leaving any of the disposal cell unfinished once filled. Upon completion of filling, the radon barrier layer and growth medium layer will be constructed.

The disposal cell will be reopened when subsequent contaminated materials are generated after closeout, particularly when future abatement activities are complete. The designated location for placement of this additional material will be an appropriately sized area on the top of the 25-acre disposal cell footprint, where future access is easy (see attached figure "NMED-Cmnt-21-Small Containment on 25-Ac-Cell).

22. **Section 4.4.4, Pg. 41 – RGR indicates that a radiation survey will be performed at Borrow Area B and any contaminated soil will be removed so that the area meets the soil standards. Please address why Borrow Area B would contain contaminated soils and why this area is proposed as a borrow source.**

RGR's response:

Borrow area B was opened to provide the high-clay content material for initial construction of the western lower slope of the regraded waste rock pile, when current sources in Borrow Area A were exhausted during reactivation construction in 2018. Later, a small amount from Borrow Area B was used to build a portion of the northern (upper) slope of the disposal cell cover in 2020, while new sources were being investigated in Borrow Area A. Borrow Area B was only used as an emergency source of clay material until Borrow Area A could be reopened.

Borrow Area B was not previously impacted by mining activities and was considered to be uncontaminated. RGR has no plans to use Borrow Area B again, the clay source has been exhausted. RGR considers Borrow Area B an affected land. The reason RGR mentioned performing a radiological scan of the area is to confirm that no radiological contamination exists in the area. RGR is committed to ensuring all affected areas are documented as

clean.

23. Section 4.4.4, Pg. 42 – Please indicate the volume of impacted soil to be removed that is associated with the treated water discharge pipeline. This does not appear to be stated in Table 4.3.

RGR's response:

The estimated volume of impacted soil to be removed from the treated water discharge pipeline is 8,400 cu. yds. (listed in Table 4.3 as "Treated Water Discharge Pipeline Corridor"). This was based on removing a 6" layer of soil across a 20-feet wide zone encompassing the pipeline for 4.3 miles.

24. Section 4.4.5, Pg. 43 – RGR submitted a corrective action plan for the diesel spill reported in 2019. NMED is still reviewing the corrective action plan and has not approved it to date. The final disposition of the impacted soil will need to be approved as part of that plan.

RGR's response:

RGR acknowledges the comment.

25. Section 4.4.5, Pg. 43 – RGR performed radiation surveys in 2012 and indicates that additional surveys were conducted from 2019 through 2021. Please indicate where in the CCP the results from more recent sampling are located.

RGR's response:

The radiation surveys performed from 2019 through 2021 were informational surveys, using unshielded gamma meters, to track radiological changes as site construction and closeout/closure activities progressed. The effects of shine were noticeable. Please see the attached Figure ("NMED-Cmnt-25" Radiological Scans 2019-2021) for these surveys. The radiological survey of the discharge pipeline was performed in 2020 and is included in Appendix D.2.

26. Section 4.4.5, Pg. 44 – Please indicate the location where construction debris, pipeline, etc. will be staged prior to placement in the disposal cell. This staging area needs to have primary and secondary containment to prevent soil contamination from occurring as a result of staging materials

that have radiological impacts. Please address any BMPs that will be proposed for the staging area.

RGR's response:

The location for staging construction debris will be east of the disposal cell. This area is already impacted by previous mining operations and will need to be cleaned up once the disposal cell expansion is approved.

The area was selected for staging mine debris generated by remediation activities for the following reasons:

1) Proximity to the disposal cell for final burial
2) Large area to store mine debris
3) Convenient area to consolidate all debris from around the site

The majority of the mine debris is metal, mostly structural steel and has demonstrated very little removable contamination, when characterized for potential release. Once RGR completes the characterization and segregation of materials for unrestricted release, it will then temporarily store the un-releasable debris in the area east of the disposal cell.

RGR would like to discuss with NMED the reasoning and need for secondary containment when storing the debris, as well as alternatives. The size, shape and weight of the larger pieces of metal will make it difficult to manage, in or out of the containments. Some of the metal debris has been stored outdoors and has become slightly contaminated simply by exposure to the soils it has rested on, or by blowing dust from the old waste pile. In many instances, the soils are much more contaminated than the metals.

As a preference, RGR proposes to construct a temporary, compacted clay liner to store the metal debris on, in the area east of the disposal cell. This temporary liner could be constructed to abut with the existing disposal cell and be extended eastward as volume is needed. The temporary clay liner would be constructed to the same specifications as the disposal cell liner. Berms would be compacted around the liner. If a cover could be economically constructed, it could be useful in mitigating stormwater contacting the debris.

Other options include laying out surplus liner material from the MWTU pond reconstruction project, place materials on top and then cover those materials to minimize stormwater contact.

RGR would propose that releasable debris simply be stored on railroad ties or timbers, or other supports to lift it off the ground and minimize contact with surface water. Another option is to place irregular scrap and debris on the many concrete slabs that are available for storage.

27. Section 4.4.6, Pg. 46 – Please indicate if RGR has seen any erosional features forming on the reclaimed surface of the waste rock pile. This could be in the

form of rills, gullies, wash-outs, etc. Based on a review of Drawings CL 09- CL 11, it appears that there are no designed benches on the reclaimed waste rock pile and expanded disposal cell. Please address how stormwater will be routed and how the reclaimed surface will be designed to minimize erosion. In addition, RGR is proposing to place crushed concrete on the waste rock pile and adjacent diversion channels for erosion protection. Please indicate where this material is proposed for placement on the waste rock pile. Placement of a rock armor on top of a soil cover, may reduce the soil cover's ability to store-and-release water. It is unclear if this is the intent of the soil cover or if it is only to be used as a vegetative cover system. Please address.

RGR's response:

Generally, the waste rock and disposal cell have shown no significant erosional features. RGR has observed some small rills develop on the waste rock pile, but this has been mostly along the south waste rock pile berm, where vegetation growth has been sparse and the southern exposure dries the ground. RGR has used erosion blankets to cover and protect the WRP/disposal cell surface until vegetation was established. After 2+ years since the existing WRP and disposal cell covers were completed, vegetation has become well established on much of the slopes and has protected the slopes from erosion.

With regard to stormwater routing, please see the response and attached figure for Comment #3.

The reclaimed surface is designed to minimize erosion through the use of a flatter slope (5H:1V), vegetation, limiting slope lengths to 30 feet or less and grading of the surface to minimize concentration of water flow. Drainage channels will be used to conduct water flow and reduce energy.

Crushed concrete and/or rock rip-rap will be used, if needed for added erosion protection. The preferred temporary erosion control material would be an erosion blanket material that temporarily protects the slopes until vegetation is established. Crushed concrete or rock would be used for water bars in drainage channels and as rip-rap blankets on the lower portions of the slopes, where runoff is observed to accumulate.

The intent of the soil cover is both for vegetation cover system and as an evapo-transpiration cover.

28. **Section 4.5.2, Pg. 48 – Please indicate if RGR has performed any post-reclamation radon monitoring on the lower west slope of the waste rock pile or any other areas that have been reclaimed. If so, please provide these results.**

RGR's response:

Reclamation has not yet been completed at any locations at the site. No post-reclamation radon monitoring has been performed. The waste rock pile and disposal cell covers have been constructed, but they are not yet complete. RGR is working with MMD on agreement of the final thickness of the growth media layer on the waste rock pile and disposal cell. RGR has proposed placing a 2-feet thick layer of growth media on top of the 2-feet thick radon barrier layer and is awaiting approval.

RGR conducted a radon flux survey of the lower west slope of the waste rock pile in 2019 ("NMED-Cmnt-28-2019 Radon Flux Measurement–Lower West Slope of WRP"). At that time, no growth media layer had been constructed, only the 2-feet thick radon barrier. The disposal cell did not yet have a cover, it was still being filled.

A second radon flux survey was performed in 2021, after the disposal cell cover was constructed ("NMED-Cmnt-28-2021 Radon Flux Report on the Disposal Cell Cover").

29. Section 4.6.1, Pg. 53 – RGR indicates that if additional erosion protection is needed for surfaces on the waste rock pile, riprap will be applied. Please address how RGR plans on determining if additional erosion protection is needed. Based on NMED experience, this should be addressed as part of the design and is based on the cover material that will be placed, the design configuration of the facility, the slope lengths, drainage benches, % slopes, etc. It is unclear what criteria RGR will use to determine where riprap will need to be placed.

RGR's response:

As part of the original CCP, erosion protection had been considered in the design stage, which (discussed in Sections 4.6.1 and 5.5). Erosion modeling was performed for the original CCP using RUSLE. In the worst case, a slope length of 350 feet at 20%, the best erosion protection was achieved by the use of hay mulch.

The design of the WRP has included reshaping to avoid concentrated runoff and maintain sheet flow. Vegetation is also a key factor in the design for controlling erosion. RGR is committed to keeping slope lengths shorter than 350 feet and will add drainage benches in the design of the expanded disposal cell where needed.

With the assumption that the WRP and disposal cell are designed properly to minimize erosion, RGR will determine the need for additional erosion control when erosion begins to develop on the slopes. Areas of concern to watch for will be surfaces that are susceptible to erosion due to high runoff velocities or concentrated flow. Areas susceptible to erosion may be predicted based on as-built slopes using the RUSLE2 equation and the WEPP model.

30. Section 4.6.1, Pg. 54 – RGR indicates that Drawing Sheets CL 09-CL 13 show erosion protection. Please indicate where erosion protection is shown in these figures, specifically on the figures showing the waste rock pile and expanded disposal cell. In addition, RGR has indicated that the 100-year, 24-hour storm event was used to design the drainage channels. NMED recommends evaluating the need for a design that can accommodate larger storm events and should be based on precipitation patterns seen in the last 10 years.

RGR's response:

The only erosion protection shown on the drawings for the waste rock pile and disposal cell (drawings CL-09, -10 and – 11) are the design slope and drainage bench. RGR will run the WEPP model, RUSLE, slope stability and stormwater runoff programs and re-evaluate the need for erosion protection.

On Drawings CL-12 and -13, the erosion protection is called out in the drawing notes: drop structures, stilling basins, check dams and rock-fill geogrid.

RGR acknowledges the comment regarding drainage channel designs for a 100-year storm event. RGR will investigate storm events over the past 10 years and evaluate the need for an alternative design standard to the 100-year storm event for the site.

31. Section 5.3, Pg. 60 – Please indicate if post-closure radon monitoring should be performed to ensure the radon barrier is performing as designed.

RGR's response:

Post-closure monitoring should be performed to ensure the radon barrier continues to perform as designed.

32. Section 5.5, Pg. 60 – RGR indicates that erosion monitoring will commence through the 12-year post-reclamation period or until released under the Mining Act. NMED will require some frequency of long-term erosion monitoring of the disposal cell to ensure that the facility is performing as designed over a period greater than 12 years.

RGR's response:

RGR acknowledges the comment. NMED and RGR have been working through the requirements of a post-closure monitoring program for the site. RGR will continue to work

with NMED on developing this plan. RGR submitted a proposal to NMED on a post-closure monitoring plan in 2021 and is awaiting comments on that.

33. Table 4.3 and Appendix D.2 – Radiological Surveys of Discharge Pipeline – Section 5, Page 10 – Table 4.3 indicates that 8,400 cubic yards of contaminated soil needs to be removed that is associated with the discharge pipeline corridor, but page 10 of Appendix D.2 states that "a few tens to a few hundred cubic yards" of contaminated soil needs to be removed that is associated with the discharge pipeline. Please address this inconsistency in volumes.

RGR's response:

As stated in Comment #23, RGR believes the more reasonable volume estimate is the approximately 8,400 cu. yds., as listed in Table 4.3. This estimate is based on removing a 6" layer of soil across a 20-feet wide zone encompassing the pipeline for 4.3 miles.

The statement made by the consultant in the 2020 radiological survey of the discharge pipeline was based on its perception of the results of the gamma scan it performed. A more accurate estimate of contaminated soil volumes surrounding the pipeline will only be known once the pipeline is removed. RGR's higher volume estimate was based on allowance for possible unknown conditions.

Because of possible shine affects from the pipeline and the difficulties of surveying the soils accurately with the pipeline in place, RGR is planning to perform another radiological survey of the pipeline corridor once the pipeline is removed. The radiological survey of 2020 indicated that most of the soils adjacent to the pipeline were not contaminated.

34. Figure 1-7 – This figure appears to be missing from the figures section. Please address.

RGR's response:

Figure 1-8 was supposed to be labeled as Figure 1-7. Figure 1-8 was created and labeled prior to the final version of the CCP. When the final version of the CCP was completed, Figure 1-8 did not get relabeled.

35. Appendix B – PDF page 44 of 334 – Though the analytical results for the U and Ra concentrations are in the paperwork provided from the analytical lab, they are not included in the Soil Chemical Analytical Results summary tables. Please document them in the appropriate table

RGR's response:

Please see the attached Table ("NMED-Cmnt-35-Table 2b-SMC-1-2-3") with the requested additions to the Table. Th old table in Appendix D.3 will be substituted for this one, when the technical review period is completed and the final edits are made to the CCP. Please note, the reference to Appendix B in this comment should be Appendix D.

36. Appendix D.1 – Figure 1. – The map is titled "Proposed Sample Locations" and has no legend. Please provide a complete map or maps showing the actual sample locations and clarify what these sample locations were used for. Ensure that all sample locations documented in the summary tables in pages 190 through 193 are shown on these maps provided.

RGR's response:

Please see the attached maps ("NMED-Cmnt-40-Sample Maps D-1-1") for Table and response to Comment #7 and #40. Map "Figure D.1.1, Soil Sampling Locations April 2012 and 2007" shows the locations of soil sampling around the MWTU ponds and berms. These soil samples were collected to investigate contamination in the ponds and suitability of soils (in the berms) for clean fill. Map "Figure D.1.1b, Soil Sampling Locations April 2012 and 2007" shows the location of the background sampling.

Map "Figure D.1.1c "Mt Taylor Mine Shaft Muck Sample Locations – 5/18/2010 - 2012" shows the location of the shaft muck samples (Table 1). This map is also included in Appendix D.1. The shaft muck was being considered as a cover material for the future disposal cell..

Generally, Appendix D.1 includes sample locations and summary tables for samples collected in 2012, along with physical characteristics of the soils for possible use as cover material (Atterburg limits, compaction curves, grain size distribution, soil classification), along with the soil bore logs. Based on the summary table of laboratory analysis, the samples were collected to investigate the soils outside of the pond basins for suitability as cover materials for the proposed disposal cell and waste rock pile, among other covers. Appendix D.3 contains the field sampling and laboratory test results as well as the summary Tables 1 (Soil Physical Properties Analysis-April 2012), Table 2 (Soil Chemical Analytical results- April 2022), and Table 3 (Chloride and Sulfate Detections of Sediments – April 2012), for data collected from 2014 through 2022.

37. Appendix D.1 – It is unclear if site conditions have changed since 2012. Please address if new samples should be taken to validate and verify the 2012 data. NMED understands that some of the previous sampling locations have been graded, backfilled, or otherwise changed from the 2012 condition

as they were primarily located in and around the ponds.

RGR's response:

New soil samples will be taken, where site conditions have changed. RGR is embarking on a full site radiological characterization study. To date, RGR has completed investigating the "Wind-blown" area north of Marquez Arroyo, the Ore Pad area and the "Service and Support" area (a polygonal area south of the Service Shaft to the south-east edge of the facility and from just west of the Carp shop eastward to the escarpment). This survey is attached ("NMED-Cmnt-27-Surface and Subsurface Soil Radiological Characterization"). Radiological Survey of the More areas will be added to the study. The focus will be on radiological investigation (laterally and horizontally), to better estimate Radium-226 concentration in the soils and volumes of contaminated soil to be excavated and placed in the disposal cell. Affected lands will also be identified and investigated.

Presently, in the MWTU pond area, the ponds are being resurveyed to verify the cleanup efforts to date have been successful. After that, all of the area outside of the pond basins will be surveyed and sampled. Borrow Area A will be characterized again, particularly in regard to continued use as a source of the clays needed to construct the cover for the expanded disposal cell.

38. Appendix D.2 – April 2012 Soil Investigation Memorandum – Table 1 – Table 1 appears to show the radiation survey and sample results for the background samples taken for the mine site. Based on the background sample results, the average Radium-226 concentration is 1.53 pCi/g. Throughout the CCP, RGR indicates the clean-up standard will be 5 + 1.8 = 6.8 pCi/g. Please address what the 1.8 pCi/g is based on.

RGR's response:

An original background sample was taken on June 10, 2007, a composite sample taken from 0 to 1-ft depth. The location was approximately 100 ft south of the waste rock pile, south of the south diversion ditch. The location was selected at the colluvium formation at the foot of the mesa because geography and soils composition are similar to the geography and composition of the mine site. This sample was seen as representing background for comparison against other site soil samples. The sample was analyzed by Energy Laboratories, with a result of 1.8 +/- 0.2 pCi/g Ra-226.

On April 23, 2012, a separate background sample (sample ID# MTE-1) was taken by Trinitek Services for comparison against the June 2007 sample and for comparison with soils in the mine and San Mateo vicinity. This sample was also a composite of the soil from 0 to 1-ft depth. It was taken at the colluvium deposit on the south side of Marquez Arroyo, about 200 feet west of the FUS Forest Service boundary.

The location was selected at the colluvial formation at the foot of the mesa because the geography and soils composition are similar to the geography and composition of the mine site. The location was also selected because it was further away from potential mine contaminants. The sample was analyzed by Energy Laboratories, with a result of 1.7 pCi/g +/- 0.05 Ra-226.

The June 2007 background Ra-226 concentration (1.8 +/– 0.2 pCi/g) was quite close to the April 2012 background concentration (1.7 +/– 0.5 pCi/g). Therefore, the assumption was made in summer 2012 that the 1.8 pCi/g would continue as the default Ra-226 background concentration for the colluvial formations typical of the mine site.

RGR strongly considers both the 2007 background sample and the 2012 sample MTE-1 as being more representative of the background in the colluvium typical of the mine and areas where uranium ore was handled and stored, than in the alluvium of the plain distant from the mine.

39. Appendix D.2 – Radiological Surveys of Discharge Pipeline – Section 5 – Page 10, "These results suggest that the volume of contaminated soil that may require excavation and removal to release the pipeline corridor lands to the PRLU as described in the Mine Closeout/Closure Plan (RGR, 2013), is likely to be relatively small, perhaps a few tens to a few hundreds of cubic yards of material that may be contaminated in excess of the 6.8 pCi/g release criterion for Ra-226 concentrations in soil."

39.1 Please provide NMED with an itemized estimated total volume of materials planned to be placed in the disposal cell and show the capacity of the proposed disposal cell expansion. Include estimates for all materials and not just the contaminated soil mentioned in this section.

RGR's response:

Please see the attached table "NMED-Cmnt-39-1 – Table 1- Summary of Materials Destined for the Disposal Cell".

39.2 No soil samples were taken in the areas of elevated gamma readings along the discharge pipeline corridor. Please indicate if RGR plans to further characterize the soil impacts in the areas of elevated gamma readings along the discharge pipeline corridor in order to determine the extent of contaminated soils in excess of the 6.8 pCi/g release criterion for Ra-226.

RGR's response:

After the pipeline is removed, RGR intends to perform radiological characterization surveys (gamma scanning and vertical soil profile sampling) of the soils along the pipeline corridor. Additional soil samples will be collected to determine the extent of Radium-226 in the soils along the pipeline corridor to meet the 6.8 pCi/g cleanup standard.

40. Appendix D.3 – Laboratory Test Results – RGR needs to submit a map or maps showing the locations of all sampling points that are shown in Tables 1, 2 and 3. To note, all tables that show sampling results should be accompanied by a Figure that shows the locations of each sample point.

RGR's response:

Please see the attached requested maps ("NMED-Cmnt-40-Maps for Figure D-1-1"). These maps show the locations of all the samples listed in Tables 1, 2 and 3.

NMED Summary Comment

NMED is withholding issuance of the environmental determination pending completion of the technical review of the application and Updated CCP for DP-61 renewal and modification to ensure compliance with
20.6.2 NMAC.

New Mexico
Environmental Law Center

Mr. Jerry Schoeppner
Director, Mining and Minerals Division
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

VIA ELECTRONIC MAIL and
U.S. MAIL, FIRST CLASS

Re: Request for hearing, Permit No. CI002RE (Mt. Taylor Mine)

July 14, 2022

Dear Director Schoeppner:

On behalf of the Multicultural Alliance for a Safe Environment (MASE) and Amigos Bravos, please accept the following request for a hearing, pursuant to 19.10.9.904.A NMAC, on Rio Grande Resources Corp.'s (RGR) proposed revisions to its Closure/Closeout Plan (CCP).1

MASE is rooted in the experiences of uranium-impacted communities of the southwestern U.S. MASE is a coalition of communities working to restore and protect the natural and cultural environment through respectfully promoting intercultural engagement among communities and institutions for the benefit of all life and future generations. MASE's members live near Mt. Taylor and many have substantial cultural ties to the mountain. Thus, MASE's members have a significant interest in ensuring that the Mt. Taylor Mine remediation protects public health and environmental resources, particularly groundwater and cultural values.

Amigos Bravos is a statewide water conservation organization guided by social justice principles and dedicated to preserving and restoring the ecological and cultural integrity of New Mexico's water and the communities that depend on it. While rooted in science and the law, their work is inspired by the values and traditional knowledge of New Mexico's diverse Hispanic and Native American land-based populations, such as MASE members, with whom they collaborate. Both MASE and Amigos Bravos have participated in various aspects of Mt. Taylor Mine permitting since 2010.

MASE and Amigos Bravos seek a hearing on RGR's CCP application for the following reasons. MASE and Amigos Bravos reserve the right to identify and submit additional concerns.

MASE and Amigos Bravos are concerned that proposed soil cleanup standards are insufficient to protect public health and cultural values. The CCP indicates that for radium; soil will be remediated to 5 picocuries per gram (pCi/g) above background levels. The CCP indicates that background radium

concentrations average 1.8 pCi/g. Thus, the proposed soil cleanup would ultimately result in radium concentrations more than three times background (6.8 pCi/g). As a matter of equity and sound reclamation policy, RGR should be required to remediate soil to pre-mining conditions.

RGR's response:

RGR acknowledges MASE's concern. New Mexico Mining and Minerals Division (MMD) and New Mexico Environment department (NMED) provide a guidance titled "Joint Guidance for the Cleanup and Reclamation of Existing Uranium Mining Operations in New Mexico, March 2016", to assist mine sites in addressing soil radiation at uranium mines as part of reclamation activities. In this guidance, it is stated "the goal of mitigating mine site radiation will be reclamation to radiation levels that are compliant with 40CFR 192.12, 40CFR 192.32 and 10 CFR 40 such that remedial actions shall provide reasonable assurance that: (1) the concentration of Ra-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than (a) 5 pCi/g averaged over the first 15 cm of soil below the surface…"

Additionally, the cost estimate for financial assurance that RGR submitted on June 18, 2022 does not appear to include estimates for long-term groundwater quality monitoring or remediation if necessary. MASE and Amigos Bravos have long expressed concern that any meaningful remediation effort include long-term water quality monitoring of every groundwater source impacted or having the potential to be impacted by the Mt. Taylor Mine. While RGR has included a long-term groundwater monitoring plan in the CCP, the plan does not appear to be adequate to address the various potential avenues by which groundwater contamination might occur. RGR's long-term monitoring plan also does not seem to be reflected in the cost estimate.

RGR's response:

MMD and NMED have both stated that they will require RGR to provide long-term groundwater monitoring. RGR is working with both agencies to define the plan and provide sufficient financial assurance.

MASE and Amigos Bravos are further concerned that the long-term groundwater monitoring program described in the CCP is not sufficiently robust to ensure long-term (100+ years) groundwater protection. RGR appears to rely on existing wells for use as a monitoring network. These wells may not be located to best detect mine related groundwater contamination. MASE and Amigos Bravos would like to opportunity to develop recommendations in this regard and provide them for the agencies' and RGR's consideration.

RGR's response:

RGR recognizes that the current positioning of wells may not be ideal. RGR is investigating plans for installing properly located and designed monitor wells for the deep aquifers. RGR has engaged geohydrologists to assist in this effort and to model the groundwater flow paths associated with the

mine.

Further, the CCP does not appear to include any monitoring plan for water in the flooded mine workings. RGR asserts that existing grouting will ensure that contaminated water in the mine shaft will never mix with uncontaminated groundwater sources. However, there is no demonstration that the current grouting will maintain its integrity over the long term. If the mine shaft is not backfilled in a manner to permanently prevent aquifer intermixing, what contingency plan, and funding source, will be in place to ensure that the public does not inherit the liability from the decision to allow the mine to fill with water without backfilling in 1989?

RGR's response:

RGR acknowledges MASE's concerns and is in discussion with MMD, NMED and New Mexico Office of Engineer regarding the integrity of the shafts. RGR has engaged a consulting engineering group to examine options for plugging the shafts.

MASE and Amigos Bravos are concerned that RGR's proposed waste pile coverings will not permanently protect against erosion or water infiltration. MASE members' experience at other mine sites suggests that standard waste pile covers, such as RGR proposes, do not prevent erosion, water infiltration, or wildlife burrowing, particularly over the long term. In some instances, MASE members have observed significant erosion in as little as ten years at sites using the same techniques that RGR proposes. The CCP needs to include monitoring and maintenance measures in perpetuity to ensure that engineered covers and other aspects that will be permanently relied upon maintain integrity for a minimum of 100 years and preferably for 500 years or longer.

RGR's response:

NMED has raised the questions of erosion and infiltration of the waste rock pile and the need for long term monitoring, maintenance and assurance of cover performance with RGR. RGR has been in discussion with MMD and NMED regarding a 100-year plan for site maintenance and monitoring and tying it into the CCP.

Finally, the CCP does not appear to consider the impacts of climate change on remediation plans. For example, the CCP does not appear to consider the likelihood of more frequent 100-year or even 1000-year storm events causing extreme precipitation due to climate change and what impacts the increased frequency of such events, or a single 1,000-year event, might have on remediation plans, such as on mine waste cover integrity, stormwater runoff and contaminated sediment transport.

RGR's response:

RGR has begun looking into the influence of climate on facility operations. RGR has engaged an engineering group to redesign a water control structure to accommodate a 500-year storm event.

MASE and Amigos Bravos look forward to working with MMD, NMED and potentially RGR, to address their concerns and ensure that the Mt. Taylor Mine remediation can serve as an example of mine remediation that protects environmental resources and respects cultural values.