RIO GRANDE RESOURCES

December 31, 2013

David L. Clark
Program Manager, Ecologist
Mining and Minerals Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject: Transmittal Letter - Revision 1 of the April 2013 Mt. Taylor Mine Closeout Closure Plan and Revision 1 of the Application for Revision of Mine Permit to Active Status Revision 13-2, CI002RE

Dear Mr. Clark,

Attached in six paper copies and two CD's of Revision 1 of the April 2013 Mt. Taylor Mine Closeout Closure Plan and Revision 1 of the Mine Permit Application for revision of mine status to active. This submittal has the entire revised text, but only those tables, figures, and appendices that have been revised or added are included. The Revision 1 materials should replace the originals of the Revision 0 submitted in April 2013. A list of the included revisions is included with each of the six copies and CD's.

Please contact me with any questions.

Joe Lister

Mine Manager
Mt. Taylor Mine
Rio Grande Resources Corporation

CC: David L. Mayerson
Mining Environmental Compliance Section, Ground Water Quality Bureau New Mexico Environmental Department
1190 St. Francis Drive N2300, PO Box 5469
Santa Fe, New Mexico 87502

Index of Application for MMD Permit Revision and Modification of DP-61
Mt. Taylor Mine Revision 1 November 2013

Only Revision 1 documents are inlcuded in this submittal.
Revision 1 documents replace Revision 0 documents.
Revision 0 documents are otherwise retained.
Some Revision 1 documents have no Revision 0 versions.

		Rev. 0 April 2031	Rev 1 Nov. 2013
TEXT			X
LIST OF TABLES			
1.1	Deep Wells		X
1.2	Ground Water Levels in Wells and Shafts		X
2.1	Deep Ground Water Quality Data		X
2.2	Sanitary Treatment Plant (STP) Discharge Water Quality		X
5.1	List of Relevant Permits and Licenses	X	
5.2	AAQS Criteria Pollutants	X	
6.1	Mine Water Discharge Monitoring Parameters	X	
6.2	Action Leakage Rates for Mt. Taylor Mine Ponds		X
6.3	Water Quality in Point Lookout Aquifer and Mine Pool		X
LIST OF FIGURES			
1-1	Site Location Map	X	
1-2	Geological Section	X	
1-3	Mine Permit Area		X
1-4	Well Locations and Descriptions		X
1-5	Typical Section of Dewatering Wells		X
1-6	Observation Wells		X
2-1	Existing Mine Units		X
2-2	Treated Water Pipeline	X	
2-3	Radium Treatment System		X
3-1	Isometric View of Typical Hydraulic Control Structure	X	
3-2	Schematic Section View of Waste Pile Lined Disposal Cells		X
3-3	Mine Activation Contaminated Pond Sediment Disposal Cell		X
6-1	Radiological Monitoring Locations	X	
LIST OF APPENDICES			
A	Drawings		
	MT13-AC-01		X
	MT13-AC-02		X
	MT13-AC-03	X	
	MT13-AC-04	X	
	MT13-AC-05	X	
	MT13-AC-06	X	
	MT13-AC-07	X	
	MT13-AC-08		X
	MT13-AC-09		X
	MT13-AC-10	X	
	MT13-AC-11		X
	MT13-AC-12	X	
	MT13-AC-13	X	
	MT13-AC-14		X
	MT13-AC-15	X	
	MT13-AC-16		X
B	Engineering Analyses	X	
	Cover Sheet		X
C	Other Permits	X	
D	Ion Exchange Plant Design	X	
E	Pipeline Outfall Investigations		X

Index of Mt. Taylor Mine Closure/ Closeout Plan April 2013
Revision 1 November 2013

Only Revision 1 documents are included in this submittal.
Revision 1 documents replace Revision 0 documents.
Revision 0 documents are otherwise retained.
Some Revision 1 documents are new in Rev 1 and have no Revision 0 versions.

		Rev. 0 April 2031	Rev 1 Nov. 2013
TEXT			X
LIST OF TABLES			
1.1	Existing Permits		X
1.2	Ground Water Levels in Wells and Shafts		X
2.1	Water Quality test Results for Mine Pool in 24-ft Shaft	X	
2.2	Water Quality Test Results for Point Lookout Aquifer, Well 2A		X
2.3	Deep Wells		X
2.4	Mine Water Treatment Ponds Area Radiological Profile	X	
2.5	Capacity of MWTU Ponds with Design Upgrades		X
3.1	Mt. Taylor Mine Building Radiological Survey Results		X
4.1	Inventory of Potential Contaminants on Hand		X
4.2	Estimated Volumes and Locations of Contaminated Sediment and Soil		X
4.3	Earthwork Balance		X
5.1	Building Inventory		X
5.2	Seed Mix: Selected Species and Planting Rates		X
5.3	Interim Vegetation Success Standards		X
LIST OF FIGURES			
1-1	Site Location Map	X	
1-2	Existing Mine Facility		X
1-3	Mine Permit Area		X
1-4	Well Locations and Descriptions		X
1-5	Typical Section of Dewatering Wells		X
1-6	Observation Wells		X
2-1	Geologic Section at the Mt Taylor Mine	X	
2-2	Pre-Mining Topography	X	
2-3	Treated Water Pipeline	X	
4-1	Mine Closeout Contaminated Sediment/ Soil Disposal Cell		X
5-1	Site Radiological Data		X
6-1	Closeout Schedule		X
LIST OF APPENDICES			
A	Drawings Cover		X
	MT13-CL-01 Title Sheet		X
	MT13-CL-02 Closeout Plan Index Sheet		X
	MT13-CL-03 Gamma and Soil Radium Sample Locations		X
	MT13-CL-04 Facility Disposition Plan		X
	MT13-CL-05 Shaft Closure - Manway Vent		X
	MT13-CL-06 Shaft Closure - Production Shaft		X
	MT13-CL-07 Final Grading Plan Mine Water Treatment Pond and Ore Pad Areas		X
	MT13-CL-08 Typical Sections - Mine Water Treatment Pond Infill		X
	MT13-CL-09 Final Grading and Cover Plan - South Waste Rock Pile Area		X
	MT13-CL-10 Final Grading and Cover Sections - South Waste Rock Pile Area		X
	MT13-CL-11 Final Grading and Cover Plan - North Waste Rock Pile Area		X
	MT13-CL-12 Final Grading and Cover Sections - North Waste Rock Pile Area		X
	MT13-CL-13 Final Site Grading Plan		X
B	Engineering Analyses		
	RUSLE2		X
C	Tech Specs		
	C.1 SHAFT HEADFRAME AND COLLAR EQUIPMENT DEMOLITION	X	
	C.2 BUILDINGS AND PIPELINE DEMOLITION		X
	C.3 SHAFT BACKFILL AND PLUGGING		X
	C.4 EARTHWORK		X
	C.5 REVEGETATION		X
	C.6 WELL AND CONDUIT PLUGGING		X
D	Ion Exchange Plant Design	X	
E	Cost Estimate		X
F	Revegetation and Weed Management Plan		X

RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS DATED 4/5/2013

From Mining and Minerals Division dated 10/4/2013

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

Responses to Comments of Technical Adequacy Review, Mine Permit Revision, Mt. Taylor Mine, Permit CIOO2RE by MMD

1. Section 2.6 What is the proposed disposition of the native soil currently covering the ore stockpile?

Ore stockpile cover soil that contains radium levels above the 6.8 pCi/g cleanup standard will be placed on the waste pile. Soil with radium below the cleanup standard will be placed on the waste pile as interim cover, an initial layer of the final cover, on the outslopes regraded during mine reactivation. Sections 3.3 and 3.2.1 will be modified to make this clear.

2. Section 3.1, Page 9 Why is the Water Quality Standard 30 pCi when EPA MCL is 5pCi?

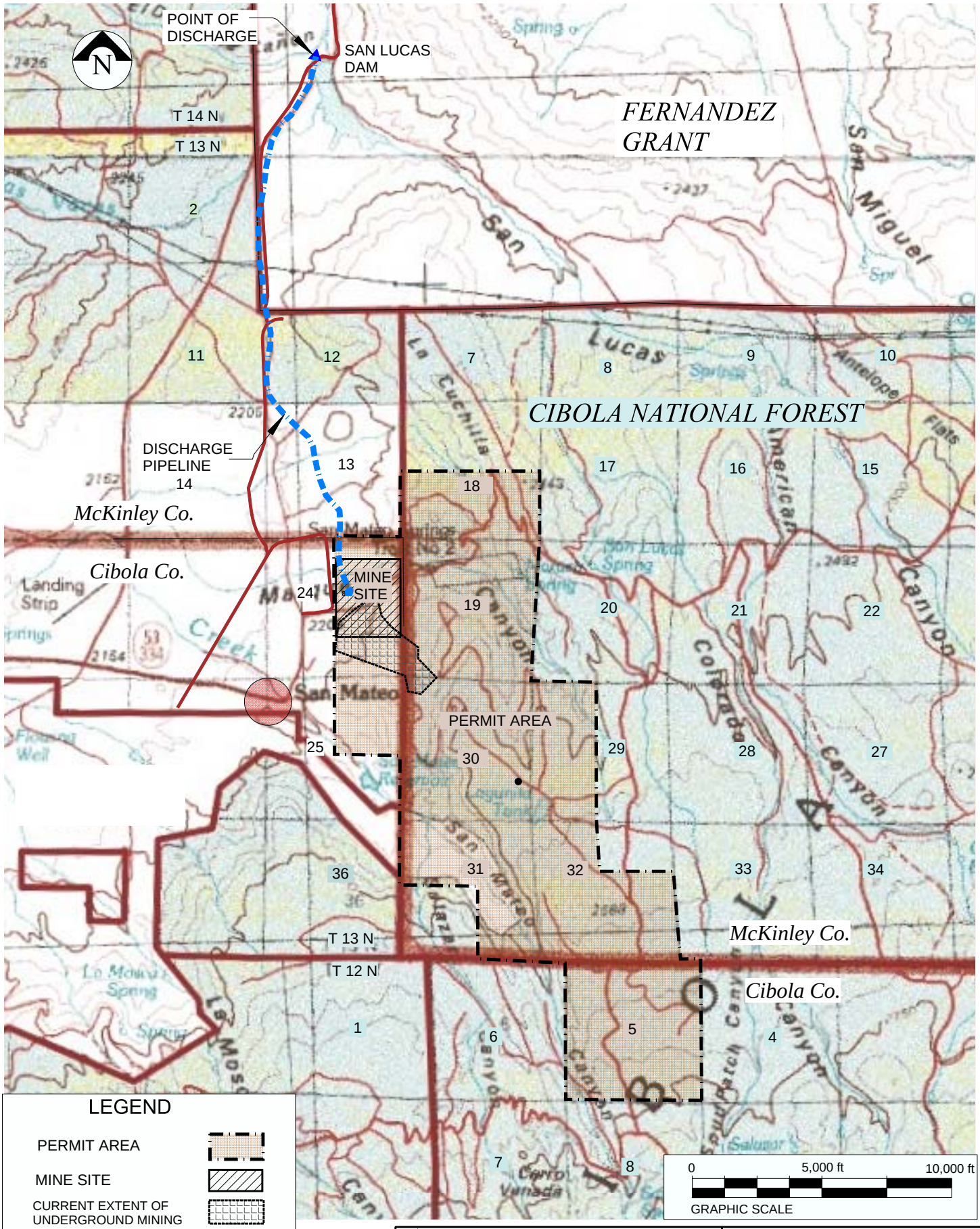
The 30 pCi/L concentration of combined RA-226 and RA-228 is consistent with the Human Health Standards in 20.6.2.3103A NMAC as enforced by NMED Ground Water Quality Bureau, the jurisdictional agency.

3. Section 3. 1.2, Page 11 Ponds: Please add detail for pond liners, i.e., weight, tear strength.

The minimum physical properties required for the HDPE geomembranes used for pond liners will be those listed in the most recent (at the time of construction) of GRI Test Method GM13, Table 1a (copy attached). The Geosynthetics Institute (GSI) is the principal source for material specifications for geomembranes.

4. Figure 2-1 The map legend indicates a permit boundary, but it is the Mine Unit Area boundary that is depicted on the map. Please correct the legend.

The legend on Figure 2-1 will be changed to replace “mine permit boundary” with “mine surface units area”.



RIO GRANDE RESOURCES CORPORATION
MOUNT TAYLOR MINE - San Mateo, NM 87020

Prepared By: Alan Kuhn Associates LLC

DATE: 10/22/13

FIGURE 1-3

MINE PERMIT AREA

RESPONSES TO COMMENTS ON MT TAYLOR MINE UPDATED CLOSEOUT/CLOSURE PLAN OF 4/5/2013 DATED 10/04/2013

From Mining and Minerals Division

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

---

1. Please add a map of the entire 4006.7-acre Mt. Taylor Mine Permit Area, including the water discharge pipeline route.

The requested map is Figure 2 of the original permit application of 1994. It is included again with this response as Figure 1-3, with a more precise route of the pipeline shown.

2. Drawing MTI3-CL-02 The map legend indicates a permit boundary, but it is the Mine Unit Area boundary that is depicted on the map. Please correct the legend.

The legend on Drawing MTI3-CL-02 will be changed to replace "mine permit boundary" with "mine surface units area". The same correction will be made on Figure 2-1 and Drawing MT13-AC-01 of the permit revision application.

3. Drawing MT 13-CL-12 There is a typo in the Toe of Slope Elevation at the upper right, the number should be 7346 not 7246.

The elevation will be corrected in the next iteration.

4. Section 2.4.2, Page 9 - RGR discusses removing vegetation and contaminated sediments from the eight mine water treatment ponds when they are upgraded. Table 2.4 indicates the levels of contamination within the sediments. Section 3.1.2 of the Revision 13-2 Application states that each pond will be cleared of sediment. The planned disposition of the contaminated sediments is not clear, but these sediments need to be placed in a lined facility.

The text of section 3.1.2 of the Mine Permit Revision Application and Section 2.4.2 of the CCP will be revised to clearly state that the contaminated sediments in the treatment ponds will be excavated and disposed in a clay-lined disposal cell within the south waste pile. This cell, constructed as part of mine reactivation, will provide additional isolation and stability of the contaminated soils including contaminated sediments from mine water treatment and storm water ponds and contaminated soil from the ore stockpile pad and existing stockpile cover. At mine closeout a separate, similar cell will be constructed within the south waste pile to contain site soils with radium above 6.8 pCi/g and mine water treatment ponds sediments removed for closure. A clay liner, consisting of not less than 1.0 ft of compacted clay soil (CL,CH, or SC soils per USCS classification) under each disposal cell would provide additional protection for ground water.

Radiological surveys, ground water monitoring data, and leachability studies (Kleinfelder, 2012) show that no excursions of contaminants from these sources, either by air or water pathways, have occurred from the site during the past 30+ years that these materials have been in place and unprotected by either liners or covers. There is a plume of perched water emanating from the buried waste lagoon under the waste pile (presently being addressed by an NMED-approved abatement plan), but there is no shallow ground water below the waste pile, and only dry materials are placed in the pile.

5. Section 2.4.5, Page 11 At what uranium content value does rock become ore? RGR discusses a radionuclide level as being essentially background level. What number does RGR use to classify material as being at background levels?

The classification of mineralized rock as "ore" depends on market prices – at higher prices, lower grades become economical to mine and, therefore, can be called ore. As described in Section 4.4.3, background radium concentration averages 1.8 pCi/g. Applying the 40 CFR 192 clean-up standard, 5 pCi/g Ra-226 above background in the top 15 cm (~6 inches) of soil, 6.8 pCi/g Ra corresponds to a gamma reading of 0.026 millirem/hour. Drawing MT13-CL-03 shows the gamma readings in microR/hour taken across ground surface in the mine area.

6. Section 2.4.6 and Section 2.7 in the Revision 13-2 Application State that sediments from the two storm water retention ponds exceed the 6.8 pCi/g limit and will be removed and placed on the waste pile. These sediments need to be placed in a lined facility.

See the response to comment #4 above.

7. Section 2.5, Page 12 States that the north waste rockpile is the only future unit not existing at this time. However, in Section 2.1 of the Revision 13-2 Application, it is stated that a third shaft would be required approximately 10 years after mining resumes. Page 5 in the 1994 MMD Permit Application mentions that an additional disturbance of about 50 acres will result from a third shaft to be located in the SE 1/4 of Section 30, TI3N, R7W. Per 19.10.12.1202.A.1, the cost estimate for financial assurance shall include the entire permit area. Reclamation plans and costs for the third shaft therefore need to be included.

19.10.12.1202 A NMAC, AREA TO BE COVERED BY FINANCIAL ASSURANCE, states "The permittee or applicant shall file, with the approval of the director, financial assurance under one of the following schemes to cover the reclamation or closeout plan costs as determined in accordance with 19.10.12.1205 NMAC". One of those schemes is A(1), cited by MMD, " financial assurance for the approved reclamation plan or closeout plan for the entire permit area". Another is provided by A(2), which says:

"(2) financial assurance may be provided and approved to guarantee specific increments of reclamation within the permit area provided the sum of incremental financial assurance equals or exceeds the total amount required under 19.10.12.1205 NMAC and 19.10.12.1206 NMAC. The area to be reclaimed and the amount of financial assurance required for each increment shall be specified in detail, and the permittee shall comply with the following:

(a) An incremental financial assurance schedule and the financial assurance required for full reclamation of the first increment in the schedule shall be provided.

(b) Before mining, exploration or reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the director additional financial assurance to cover such increments in accordance with 19.10.12 NMAC.

(c) The permittee or applicant shall identify the initial and successive areas or increments on a map submitted with the permit application and shall specify the financial assurance amount to be provided for each area or increment."

This provision in the rules allows either A(1) or A(2), whichever is more applicable. RGR asserts that, because the north waste pile does not exist at this time, there is no justification for financial assurance for its reclamation at this time. Therefore, A(2)(b) is the specific clause that is relevant.

RGR's closeout/closure plan addresses (2)(a) for the full reclamation of the first increment. The north waste pile is included in the original permit, but RGR has not yet constructed it and may not need to, so under (2)(b) it would be a "succeeding increment" of mining operations not yet initiated. RGR would file additional financial assurance with the director before the north waste pile is constructed, consistent with the requirements of (A)(c) and 19.10.12.1206 NMAC.

The third shaft was not included in the original permit and is not included in the existing permit; if RGR hereafter determines it is needed, an appropriate permit application would be submitted at that time, and additional financial assurance would be provided at the time of approval.

8. Section 3.2, Page 14 Leaving large buildings on mines as a donation to landowners, without a well-developed post mine plan for the structures, may result in vandalism and dilapidation. The high utility bills associated with large buildings are an unpleasant surprise to post mine landowners, and such buildings are beyond the average person's ability to maintain and repair. The large buildings at Mt. Taylor should be demolished unless a commercial or industrial occupant can be found prior to mine closure. The reclamation costs need to be adjusted to reflect demolition of the large buildings as the default action.

In accordance with the original agreement with the landowner on which the buildings sit, he has the right to retain any mine facilities he chooses. As the owner and operator of a large ranch, the landowner is not an "average person" and has determined that the structures listed for retention for post-mining land use have economic value to him. RGR will inform the landowner of MMD's concerns.

9. *Per Section 3.2.2 of the Revision 13-2 Application, the north waste rock pile is proposed to be included as a unit within the existing mine permit boundary. Pursuant to 19.l0.12.1202.A.1 NMAC, the cost estimate for financial assurance shall include the entire permit area. The reclamation costs of the north waste rock pile, as well as the access route to the pile, need to be included in the financial assurance proposal.*

The response to comment #7 applies here, as well.

10. Section 4.3, Page 18 Past experience with concrete is that it becomes gravel and fines once it is broken up and exposed to the elements. MMD does not believe broken concrete would make adequate rip-rap. Please specify adequately-sized rip-rap.

MMD did not provide specific reference to past experience that broken concrete would not be durable enough to be used as riprap. However, this concern has been taken into account in RGR's assessment of available riprap material (see Section 4.6.1). In the process of demolishing selected concrete structures, only the more durable, intact fragments of concrete would survive the crushing and screening steps. Gravel and sand-size fragments will be used as crusher fines in rock mulch (Appendix C.3, Section 2.9.3), and larger sizes meeting the size criteria in Section 4.6.1 will be applied as riprap. That section also states that if quantities of suitable concrete are insufficient, basalt from the mesa slope east of the mine will be used as riprap. RGR intends to make the maximum possible use of broken concrete for environmental and resource conservation reasons as well as economic reasons, in accordance with Sections 2.3 and 3.5 of "Best Practice in Environmental Management of Uranium Mining", IAEA Nuclear Energy Series NF-T-1.2.

It is important to note that the riprap will function together with the revegetation to provide long-term stability of the waste pile cover surface. The riprap will provide immediate, short-term protection against erosion as well as seed nesting sites while the vegetation cover takes hold. The riprap sizes (Section 4.6.1; Appendix C.4, Section 2.9) are based on the assumption of a bare-soil surface without vegetation. Once established, the vegetation will be the primary protection against erosion, and the riprap will become secondary.

11. Section 4.4, Page 19 The cover material suitability characteristics are not made clear in this section. Soil chemistry data is presented in Appendix D (Table D.3. 1), however these appear to be site-wide soil sample results and it remains unclear which sample results are being used to demonstrate suitable cover materials. The Closeout/Closure Plan should demonstrate cover suitability in reference to the MMD Mining Act Reclamation Program Soil Suitability Guidelines document. This includes all cover materials such as the borrow area and Mine Water Treatment Pond berms.

Appendix D contains soil data collected over the past 20 years across the site. The geologic setting (Section 2.2) provides the background for understanding the genesis of these soils and the general physical and chemical properties. East-dipping interbedded shale, claystone, mudstone, and thin sandstone lenses underlie the site and are the parent materials for the residual and colluvial soils that thinly blanket most of the site. These are surficial soils that have supported native vegetation; they are not overburden or interburden materials. The NRCS soil survey identifies the mine site soils in (http://soildatamart.nrcs.usda.gov/manuscripts/NM682/0/cibola.pdf) as Penistaja- SanMateo- Sparank series. The units on the mine site are #230 dumps-pits complex on the disturbed areas and otherwise #57 San Mateo clay loam and #257 Sparank- San Mateo Complex. According to the NRCS survey, the latter two soils naturally support western wheat grass, vine mesquite, alkali sacaton, and fourwing saltbush. Site soils are consistently low-to-moderate plasticity clays with some sandy clay. Alluvial sand with some gravel and cobbles exists in the few arroyos on site, but these soils are not in borrow locations or on the ore pad, waste pile, or water treatment ponds. The referenced soil chemistry data in Appendix D.3.1 demonstrate the consistency of soil chemistry and physical properties of soils across the site. The only soil contaminant of concern is radium.

In the interest of minimizing land disturbance, RGR intends to obtain borrow soil from previously disturbed areas around treatment ponds and waste pile(s) to the maximum extent possible, so "site-wide" samples are representative of potential borrow sources, and the data in Appendix D.3.1 show that these site soils are consistent in both engineering and chemical properties. Backfill soil for the water treatment ponds will be obtained from the pond berms and the designated borrow areas east of the ore

pad. The waste pile cover soil will be derived from these same sources as well as the shaft muck at the southwest corner of the existing waste pile, which presently supports healthy volunteer vegetation. The existing cover on the ore pad and the shaft muck support healthy volunteer vegetation, as MMD personnel observed during a recent site visit.

The primary difference between potential soil borrow sources is radium content, separating potential cover soils based on radium contamination rather than soil suitability criteria. Therefore, all samples of soil with radium content below the clean-up standard of 6.8 pCi/g represent soils that are suitable for backfill and cover material; these soils meet the criteria of MMD's Soil Suitability Guidelines. Contaminated sediments containing elevated radium will be disposed of in the waste pile or in the shaft plug mix but will not be used in soil covers.

12. Section 4.4, Page 19 The cover material placement depths are not consistently reported for each mine facility in this section. Drawing MTI3-CL-13 describes cover depths for individual facilities, and this same information should be included in the text in Section 4.4.

In addition to notes on Drawing MT13-CL-13, the text in Section 4.4.2, page 21 states that a minimum of 2.0 feet of soil cover would be placed over the regraded mine water treatment ponds. This was illustrated on Drawing MT13-CL-08, as well. Subsequently, RGR has agreed to remove sediments from the mine water treatment ponds for disposal in the waste pile, eliminating the need for cover over the backfill in the pond basins. Section 4.4.4, page 23 and Section 4.4.5, page 24 state that a minimum of 2.0 feet of cover will be placed over the waste pile(s), as do Drawings MT13-CL-10 and -12, Note 5. No other facility will require an engineered soil cover; the waste pile will be the only waste-containment facility left after closeout. The text and drawings will be revised accordingly.

13. Section 4.4, Page 19 The borrow material volumes are not identified. The Closeout/Closure Plan should clearly identify, in a tabular format, the amount of cover material needed for each facility and the amount of material available from proposed borrow sources.

Section 4.4, page 19 identifies the borrow sources for fill materials in excess of the volumes otherwise excavated in the vicinity of each facility. Volumes of earthwork, including borrow, are listed in detail in the Cost Estimate, Appendix E. Table 4.1 will be added to this section, listing the available borrow sources and volumes.

14. Section 4.4.1, Page 19 The characteristics of the materials below any proposed contamination excavation in this facility are not identified in this section. It is assumed from the text in this section and from Drawings MTI3-CL-13 and MTI3-CL-07 that the reclamation plan for this facility does not include cover material placement. Therefore, the physical and chemical characteristics of materials that will remain at the surface as a planting media should be identified.

This comment apparently refers to the ore pad area. This area will be excavated down to clean native soil, so no cover will be needed. See response to comment #11 above.

The native soil under the ore pad and the ponds is the same as the borrow material, and is characterized by the Appendix D test data and by NRCS, 1993, as the #57 and #257 soils. The waste pile cover soil will be derived from these same sources as well as the shaft muck at the southwest corner of the existing waste pile, which presently supports healthy volunteer vegetation.

15. Section 4.4.3, Page 21 States that investigative radiation surveys and soil sampling were performed in Spring 2012 in the mine area to establish background levels of radium and...found uranium and uranium progeny at background levels. What are the background levels for radium and uranium?

Section 4.4.3, page 22 describes the radium background as 1.8 pCi/g. Background total uranium is 9.96 ppm. Both values were established by samples taken in June 2007 and in April 2012.

16. Section 4.4.3, Page 22 Reiterates that contaminated soil material will be placed on the south waste pile. This material needs to be placed in a lined facility.

See response to comment #4.

17. Section 4.4.4, Page 23 Reiterates that contaminated soil and pond sediments will be placed on the south waste pile. These materials need to be placed in a lined facility.

See response to comment #4.

18. Section 4.4.4 It is unclear whether the reclamation designs for the proposed disposal facilities have accounted for the approximate 80,000 cubic yards of contaminated soil material. Although some of the drawings indicate contaminated soil placement, quantification of the volumes is not presented in the plan. Please confirm that the calculated final fill volumetrics (and the final grading plan) for these facilities has included this volume. As previously stated, MMD considers that contaminated soils and pond sediments need to be placed in a lined facility.

See response to comment #4. Contaminated soil volumes are accounted for in the disposal design and are included in the volumes listed under items 1.4.2, Appendix E, Cost Estimate.

19. Section 5.1.2, Page 32 States that Point Lookout water will be tested for the parameters listed in Table 2.2 to demonstrate that the water quality meets human health standards per 20.6.2.3103 NMAC. Why doesn't the water quality have to meet the entire human health standards as per parts A, B and C of 20.6.2.3103 NMAC?

Table 2.2 lists the parameters that NMED has considered to be relevant to the Pt. Lookout aquifer at the Mt. Taylor Mine. Previous Pt. Lookout aquifer water quality tests indicated that constituents for the other parameters of 20.6.2.3103 were absent or below level of concern for future testing. Nevertheless, periodic testing after mine reactivation will be performed as required by NMED to document that the human health standards are being met.

20. Section 5.3.2, Page 33 Radiation monitoring after closeout activities are completed needs to be conducted across the reclaimed areas, as well as in buildings that may be retained for the post mine land use. Please propose a post-reclamation site surveying methodology that will determine whether compliance with the proposed 6.8 pCi/g cleanup standard has been achieved across all reclaimed areas, with vertical profiling to a depth of at least 12 inches.

This section states that post-closure radiological surveys will be conducted to document that cleanup standards have been met. In addition, Section 4.3 states that radiological surveys will be performed prior to facility demolition, as well.

The site surveying methodologies will be the portions of the Multi-Agency Radiation Survey and Site Investigation Manual (or equivalent methodologies) for soil characterization that are applicable to uranium mine reclamation. As allowed by MARSSIM, the release criteria of 6.8 pCi/g Ra-226 will be used in lieu of a derived concentration guideline limit (DCGL). Alternatively, portions of MMD's Draft Guidance for Meeting Radiation Criteria Levels and Reclamation at New Uranium Mining Operations may be utilized; however, in its draft form it is written specifically to new mines. Radiological surveys will be conducted by health physicists and health physics technicians.

21. Table 5.1 The access/utility tunnel is proposed for retention. Page 17 of the Revision 13-2 Application has a statement that the tunnel contains a pipe that runs from a sump at the southeast corner of the shaft area and discharges into Pond #1. It appears from review of Drawing MTI3-CL-04, however, that there may be additional sumps in the service building, the compressor building and the car shop. It appears that the discharge end of the tunnel/pipeline is on the Candelaria property. It is doubtful that the Candelarias wish to receive uncontrolled and potentially contaminated discharge from pipelines/sumps in the Sandoval buildings after mine closure. The disposition of the access/utility tunnel system needs to be reconsidered, and the financial assurance costs need to be adjusted, accordingly.

Part of the facilities demolition described in Section 4.3 of the CCP includes removal of piping from, or connected to, the various facilities that will be removed. Without explicitly stating what piping is included, the intent is to remove the piping from the tunnel, even though there will obviously be no discharges through such piping after mining stops. The cost estimate already accounts for pipe removal from demolished facilities. The tunnel has value to the landowner and will be retained.

22. Drawing MT 13-CL-04 It appears that the service building encroaches upon the Candelaria property from the Sandoval property. Does RGR have a plan to address this encroachment?

The service building lies completely within the 16.6 acres that will remain under RGR ownership, as explained in Section 3.1. The property boundary is accurately shown on Drawing MT13-CL-04.

23. Table 5.4 and Table C.5.2- Please correct miss-spellings of Winterfat in both tables, and in both lists within each table.

The misspelling is a typo that will be corrected in the next iteration.

24. Identification of the route to be used to transport waste rock to the north waste rock pile, and a plan for the crossing of the Marquez Canyon arroyo, including culvert sizing if applicable, are needed.

The north waste pile does not exist yet, and will be constructed at a later date if needed, as discussed in the revision application, Section 3.2.2, page 14. The likely transport route will follow existing roads west

of the treatment ponds and over the Marquez Canyon arroyo on the pipeline crossing, which has an existing culvert.

25. Section 7, Page 35 The text states: "The cost estimate does not include closure costs for the north waste pile. If this pile is needed, RGR will update the cost estimate to include costs related to closure of this facility." Per MMD Comment 9 above, the cost estimate is required now. Please remove the quoted sentence.

See response to comment #7.

26. Appendix C, Section 2.2 RGR has reported that water inundated the mine and rose up the shafts within a few weeks of ending depressurization pumping. It seems likely this will occur again at the end of mining. Wooden debris dropped down the shaft would float on water in the shaft, potentially obstructing debris disposal. What effect will this have on disposal and the shaft lining?

MMD's reference is unclear. There is no Appendix C Section 2.2. Perhaps the reference is Appendix C.1, section 2.2.2 It is unknown how quickly ground water level in the mine pool will recover after mining. There is little wood in the shaft structures, and it would be easy to remove for disposal or burning rather than disposing of it in the shaft. Specification will be revised accordingly.

27. Table 2.5 The Mm and Max Volumes, in cy and acre feet, appear to be transposed for Pond #1. Please correct.

This will be corrected in the next iteration.

28. Appendix C, Page 6 Mine Utility Conduits: States that "steel casings, 11.5 inches diameter, shall be plugged with concrete from 18 feet depth to 2.0 feet below grade. Top 2.0 feet of casing to be removed, and remaining hole shall be backfilled with soil." These holes are 3,000 feet deep and most likely contain water at the bottom. They should be plugged with cement from bottom to within two feet of the surface, like the wells.

RGR agrees to plug the utility conduits using the same procedures used for plugging the deep wells.

29. Appendix E A discrepancy in Total Direct cost of $20,891 was calculated by MMD, compared to the $3,529,269 provided by RGR. Please correct the apparent multiplication errors in Appendix E: 1.1.2—Iines2and3; l.l.6—line3; 1.2.2—line 1; 1.3.7—line 1; l.3.8;and 1.5.1.

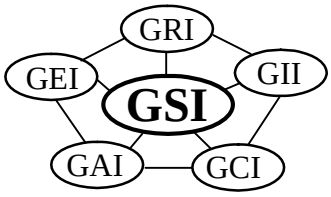
In the next iteration of the cost estimate, the multiplication errors (due to cell formula errors) will be corrected for 1.1.2 line 3 and 1.1.6 line 3. The others (1.1.2 line 2; 1.2.2 line 1; 1.3.7 line 1; line 1.3.8; and 1.5.1) are functions of rounding – each of these cells has a unit price formula, rather than a single number, and the Excel multiplication function took that calculation to about four decimal places, whereas MMD's calculation check apparently used the unit price to two places shown on the spreadsheet.

30. Appendix E Section 1.4.7 Finish grading; Bench Wall Slope Reduction, needs to be a cost estimate that reflects the difficult nature of the material and location. Current estimate is not sufficient.

The MMD comment is not specific about what it views as the "difficult nature" of this work. The bench wall is 25-30 feet high, directly accessible along its entire length both at the top and at the base. Consequently, the contractor could use the most expedient method (blasting, excavator with hydraulic

hammer, etc.) to bring down the top half of the slope in a rubble pile forming the lower half at the desired slope. In heavy civil construction and mining this is routine work. Although the original wall excavation was performed with an excavator, for conservatism RGR will assume that the sandstone wall will be hard enough to require a hydraulic hammer mounted on an excavator, so the unit price of excavation will be increased to account for this additional cost of $1.28/ CY.

Geosynthetic Institute
475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441



Revision 10: April 11, 2011
Revision schedule on pg. 11

GRI Test Method GM13*

Standard Specification for

"Test Methods, Test Properties and Testing Frequency for
High Density Polyethylene (HDPE) Smooth and Textured Geomembranes"

This specification was developed by the Geosynthetic Research Institute (GRI), with the cooperation of the member organizations for general use by the public. It is completely optional in this regard and can be superseded by other existing or new specifications on the subject matter in whole or in part. Neither GRI, the Geosynthetic Institute, nor any of its related institutes, warrant or indemnifies any materials produced according to this specification either at this time or in the future.

1. Scope

1.1 This specification covers high density polyethylene (HDPE) geomembranes with a formulated sheet density of 0.940 g/ml, or higher, in the thickness range of 0.75 mm (30 mils) to 3.0 mm (120 mils). Both smooth and textured geomembrane surfaces are included.

1.2 This specification sets forth a set of minimum, physical, mechanical and chemical properties that must be met, or exceeded by the geomembrane being manufactured. In a few cases a range is specified.

1.3 In the context of quality systems and management, this specification represents manufacturing quality control (MQC).

Note 1: Manufacturing quality control represents those actions taken by a manufacturer to ensure that the product represents the stated objective and properties set forth in this specification.

1.4 This standard specification is intended to ensure good quality and performance of HDPE geomembranes in general applications, but is possibly not adequate for the complete specification in a specific situation. Additional tests, or more restrictive

*This GRI standard is developed by the Geosynthetic Research Institute through consultation and review by the member organizations. This specification will be reviewed at least every 2-years, or on an as-required basis. In this regard it is subject to change at any time. The most recent revision date is the effective version.

values for test indicated, may be necessary under conditions of a particular application.

Note 2: For information on installation techniques, users of this standard are referred to the geosynthetics literature, which is abundant on the subject.

2. Referenced Documents

2.1 ASTM Standards

D 792 Specific Gravity (Relative Density) and Density of Plastics by Displacement
D 1004 Test Method for Initial Tear Resistance of Plastics Film and Sheeting
D 1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
D 1505 Test Method for Density of Plastics by the Density-Gradient Technique
D 1603 Test Method for Carbon Black in Olefin Plastics
D 3895 Test Method for Oxidative Induction Time of Polyolefins by Thermal Analysis
D 4218 Test Method for Determination of Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
D 4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
D 5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
D 5397 Procedure to Perform a Single Point Notched Constant Tensile Load – (SP-NCTL) Test: Appendix
D 5596 Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
D 5721 Practice for Air-Oven Aging of Polyolefin Geomembranes
D 5885 Test method for Oxidative Induction Time of Polyolefin Geosynthetics by High Pressure Differential Scanning Calorimetry
D 5994 Test Method for Measuring the Core Thickness of Textured Geomembranes
D 6370 Standard Test Method for Rubber-Compositional Analysis by Thermogravimetry (TGA)
D 6693 Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes
D 7466 Test Method for Measuring the Asperity Height of Textured Geomembranes

2.2 GRI Standards

GM10 Specification for the Stress Crack Resistance of Geomembrane Sheet
GM 11 Accelerated Weathering of Geomembranes using a Fluorescent UVA-Condensation Exposure Device

2.3 U. S. Environmental Protection Agency Technical Guidance Document "Quality Control Assurance and Quality Control for Waste Containment Facilities," EPA/600/R-93/182, September 1993, 305 pgs.

3. Definitions

Manufacturing Quality Control (MQC) - A planned system of inspections that is used to directly monitor and control the manufacture of a material which is factory originated. MQC is normally performed by the manufacturer of geosynthetic materials and is necessary to ensure minimum (or maximum) specified values in the manufactured product. MQC refers to measures taken by the manufacturer to determine compliance with the requirements for materials and workmanship as stated in certification documents and contract specifications.
ref. EPA/600/R-93/182

Manufacturing Quality Assurance (MQA) - A planned system of activities that provides assurance that the materials were constructed as specified in the certification documents and contract specifications. MQA includes manufacturing facility inspections, verifications, audits and evaluation of the raw materials (resins and additives) and geosynthetic products to assess the quality of the manufactured materials. MQA refers to measures taken by the MQA organization to determine if the manufacturer is in compliance with the product certification and contract specifications for the project.
ref. EPA/600/R-93/182

Formulation, n - The mixture of a unique combination of ingredients identified by type, properties and quantity. For HDPE polyethylene geomembranes, a formulation is defined as the exact percentages and types of resin(s), additives and carbon black.

4. Material Classification and Formulation

4.1 This specification covers high density polyethylene geomembranes with a formulated sheet density of 0.940 g/ml, or higher. Density can be measured by ASTM D1505 or ASTM D792. If the latter, Method B is recommended.

4.2 The polyethylene resin from which the geomembrane is made will generally be in the density range of 0.932 g/ml or higher, and have a melt index value per ASTM D1238 of less than 1.0 g/10 min.

4.3 The resin shall be virgin material with no more than 10% rework. If rework is used, it must be a similar HDPE as the parent material.

4.4 No post consumer resin (PCR) of any type shall be added to the formulation.

5. Physical, Mechanical and Chemical Property Requirements

5.1 The geomembrane shall conform to the test property requirements prescribed in Tables 1 and 2. Table 1 is for smooth HDPE geomembranes and Table 2 is for single and double sided textured HDPE geomembranes. Each of the tables are given in English and SI (metric) units. The conversion from English to SI (metric) is soft.

Note 3: The tensile strength properties in this specification were originally based on ASTM D 638 which uses a laboratory testing temperature of 23°C ± 2°C. Since ASTM Committee D35 on Geosynthetics adopted ASTM D 6693 (in place of D 638), this GRI Specification followed accordingly. The difference is that D 6693 uses a testing temperature of 21°C ± 2°C. The numeric values of strength and elongation were not changed in this specification. If a dispute arises in this regard, the original temperature of 23°C ± 2°C should be utilized for testing purposes.

Note 4: There are several tests often included in other HDPE specifications which are omitted from this standard because they are outdated, irrelevant or generate information that is not necessary to evaluate on a routine MQC basis. The following tests have been purposely omitted:

- Volatile Loss
- Dimensional Stability
- Coeff. of Linear Expansion
- Resistance to Soil Burial
- Low Temperature Impact
- ESCR Test (D 1693)
- Wide Width Tensile
- Water Vapor Transmission
- Water Absorption
- Ozone Resistance
- Modulus of Elasticity
- Hydrostatic Resistance
- Tensile Impact
- Field Seam Strength
- Multi-Axial Burst
- Various Toxicity Tests

Note 5: There are several tests which are included in this standard (that are not customarily required in other HDPE specifications) because they are relevant and important in the context of current manufacturing processes. The following tests have been purposely added:

- Oxidative Induction Time
- Oven Aging
- Ultraviolet Resistance
- Asperity Height of Textured Sheet (see Note 6)
- Trouser Tear (see Note 7)

Note 6: The minimum average value of asperity height does not represent an expected value of interface shear strength. Shear strength associated with geomembranes is both site-specific and product-specific and should be determined by direct shear testing using ASTM D5321/ASTM D6243 as prescribed. This testing should be included in the particular site's CQA conformance testing protocol for the geosynthetic materials involved, or formally waived by the Design Engineer, with concurrence from the Owner prior to the deployment of the geosynthetic materials.

Note 7: There are other tests in this standard, focused on a particular property, which are updated to current standards. The following are in this category:

- Thickness of Textured Sheet
- Puncture Resistance
- Stress Crack Resistance
- Carbon Black Dispersion (In the viewing and subsequent quantitative interpretation of ASTM D 5596 only near spherical agglomerates shall be included in the assessment).

Note 8: There is a GRI test currently included in this standard. Since this topic is not covered in ASTM standards, this is necessary. It is the following:

- UV Fluorescent Light Exposure

5.2 The values listed in the tables of this specification are to be interpreted according to the designated test method. In this respect they are neither minimum average roll values (MARV) nor maximum average roll values (MaxARV).

5.3 The properties of the HDPE geomembrane shall be tested at the minimum frequencies shown in Tables 1 and 2. If the specific manufacturer's quality control guide is more stringent and is certified accordingly, it must be followed in like manner.

Note 9: This specification is focused on manufacturing quality control (MQC). Conformance testing and manufacturing quality assurance (MQA) testing are at the discretion of the purchaser and/or quality assurance engineer, respectively.

6. Workmanship and Appearance

6.1 Smooth geomembrane shall have good appearance qualities. It shall be free from such defects that would affect the specified properties of the geomembrane.

6.2 Textured geomembrane shall generally have uniform texturing appearance. It shall be free from agglomerated texturing material and such defects that would affect the specified properties of the geomembrane.

6.3 General manufacturing procedures shall be performed in accordance with the manufacturer's internal quality control guide and/or documents.

7. MQC Sampling

7.1 Sampling shall be in accordance with the specific test methods listed in Tables 1 and 2. If no sampling protocol is stipulated in the particular test method, then test specimens shall be taken evenly spaced across the entire roll width.

7.2 The number of tests shall be in accordance with the appropriate test methods listed in Tables 1 and 2.

7.3 The average of the test results should be calculated per the particular standard cited and compared to the minimum value listed in these tables, hence the values listed are the minimum average values and are designated as "min. ave."

8. MQC Retest and Rejection

8.1 If the results of any test do not conform to the requirements of this specification, retesting to determine conformance or rejection should be done in accordance with the manufacturing protocol as set forth in the manufacturer's quality manual.

9. Packaging and Marketing

9.1 The geomembrane shall be rolled onto a substantial core or core segments and held firm by dedicated straps/slings, or other suitable means. The rolls must be adequate for safe transportation to the point of delivery, unless otherwise specified in the contract or order.

10. Certification

10.1 Upon request of the purchaser in the contract or order, a manufacturer's certification that the material was manufactured and tested in accordance with this specification, together with a report of the test results, shall be furnished at the time of shipment.

ENGLISH UNITS

Table 1(a) – High Density Polyethylene (HDPE) Geomembrane -Smooth

Properties	Test Method	Test Value							Testing Frequency (minimum)
		30 mils	40 mils	50 mils	60 mils	80 mils	100 mils	120 mils	
Thickness (min. ave.)	D5199	nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Per roll
• lowest individual of 10 values		-10%	-10%	-10%	-10%	-10%	-10%	-10%	
Density mg/l (min.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	200,000 lb
Tensile Properties *(1)* (min. ave.)	D 6693								20,000 lb
• yield strength	Type IV	63 lb/in.	84 lb/in.	105 lb/in.	126 lb/in.	168 lb/in.	210 lb/in.	252 lb/in.	
• break strength		114 lb/in.	152 lb/in.	190 lb/in.	228 lb/in.	304 lb/in.	380 lb/in.	456 lb/in.	
• yield elongation		12%	12%	12%	12%	12%	12%	12%	
• break elongation		700%	700%	700%	700%	700%	700%	700%	
Tear Resistance (min. ave.)	D 1004	21 lb	28 lb	35 lb	42 lb	56 lb	70 lb	84 lb	45,000 lb
Puncture Resistance (min. ave.)	D 4833	54 lb	72 lb	90 lb	108 lb	144 lb	180 lb	216 lb	45,000 lb
Stress Crack Resistance *(2)*	D5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI-GM10
Carbon Black Content (range)	D 4218 *(3)*	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	20,000 lb
Carbon Black Dispersion	D 5596	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	45,000 lb
Oxidative Induction Time (OIT) (min. ave.) *(5)*									200,000 lb
(a) Standard OIT	D 3895	100 min.	100 min.	100 min.	100 min.	100 min.	100 min.	100 min.	
— or —									
(b) High Pressure OIT	D 5885	400 min.	400 min.	400 min.	400 min.	400 min.	400 min.	400 min.	
Oven Aging at 85°C *(5), (6)*	D 5721								
(a) Standard OIT (min. ave.) - % retained after 90 days	D 3895	55%	55%	55%	55%	55%	55%	55%	per each formulation
— or —									
(b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5885	80%	80%	80%	80%	80%	80%	80%	
UV Resistance *(7)*	GM 11								
(a) Standard OIT (min. ave.)	D 3895	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	N.R. *(8)*	per each formulation
— or —									
(b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(9)*	D 5885	50%	50%	50%	50%	50%	50%	50%	

(1) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
Yield elongation is calculated using a gage length of 1.3 inches
Break elongation is calculated using a gage length of 2.0 in.

(2) The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(3) Other methods such as D 1603 (tube furnace) or D 6370 (TGA) are acceptable if an appropriate correlation to D 4218 (muffle furnace) can be established.

(4) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(5) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(6) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(7) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(8) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(9) UV resistance is based on percent retained value regardless of the original HP-OIT value.

SI (METRIC) UNITS

Table 1(b) – High Density Polyethylene (HPDE) Geomembrane - Smooth

Properties	Test Method	Test Value							Testing Frequency (minimum)
		0.75 mm	1.00 mm	1.25 mm	1.50 mm	2.00 mm	2.50 mm	3.00 mm	
Thickness - mils (min. ave.) • lowest individual of 10 values	D5199	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	nom. (mil) -10%	per roll
Density (min.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	90,000 kg
Tensile Properties *(1)* (min. ave.) • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	 11 kN/m 20 kN/m 12% 700%	 15 kN/m 27 kN/m 12% 700%	 18 kN/m 33 kN/m 12% 700%	 22 kN/m 40 kN/m 12% 700%	 29 kN/m 53 kN/m 12% 700%	 37 kN/m 67 kN/m 12% 700%	 44 kN/m 80 kN/m 12% 700%	9,000 kg
Tear Resistance (min. ave.)	D 1004	93 N	125 N	156 N	187 N	249 N	311 N	374 N	20,000 kg
Puncture Resistance (min. ave.)	D 4833	240 N	320 N	400 N	480 N	640 N	800 N	960 N	20,000 kg
Stress Crack Resistance *(2)*	D 5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI GM-10
Carbon Black Content - %	D 4218 *(3)*	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	9,000 kg
Carbon Black Dispersion	D 5596	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	note *(4)*	20,000 kg
Oxidative Induction Time (OIT) (min. ave.) *(5)* (a) Standard OIT — or — (b) High Pressure OIT	 D 3895 D 5885	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	90,000 kg
Oven Aging at 85°C *(5), (6)* (a) Standard OIT (min. ave.) - % retained after 90 days — or — (b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5721 D 3895 D 5885	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	per each formulation
UV Resistance *(7)* (a) Standard OIT (min. ave.) — or — (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(9)*	 D 3895 D 5885	 N. R. *(8)* 50%	 N.R. *(8)* 50%	 N.R. *(8)* 50%	 N.R. *(8)* 50%	 N.R. *(8)* 50%	 N.R. *(8)* 50%	 N.R. *(8)* 50%	per each formulation

(1) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction
Yield elongation is calculated using a gage length of 33 mm
Break elongation is calculated using a gage length of 50 mm

(2) The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(3) Other methods such as D 1603 (tube furnace) or D 6370 (TGA) are acceptable if an appropriate correlation to D 4218 (muffle furnace) can be established.

(4) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(5) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(6) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(7) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(8) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(9) UV resistance is based on percent retained value regardless of the original HP-OIT value.

ENGLISH UNITS

Table 2(a) – High Density Polyethylene (HDPE) Geomembrane - Textured

Properties	Test Method	Test Value							Testing Frequency (minimum)
		30 mils	40 mils	50 mils	60 mils	80 mils	100 mils	120 mils	
Thickness mils (min. ave.) • lowest individual for 8 out of 10 values • lowest individual for any of the 10 values	D 5994	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	per roll
Asperity Height mils (min. ave.) *(1)*	D 7466	10 mil	10 mil	10 mil	10 mil	10 mil	10 mil	10 mil	every 2nd roll *(2)*
Density (min. ave.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	200,000 lb
Tensile Properties (min. ave.) *(3)* • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	 63 lb/in. 45 lb/in. 12% 100%	 84 lb/in. 60 lb/in. 12% 100%	 105 lb/in. 75 lb/in. 12% 100%	 126 lb/in. 90 lb/in. 12% 100%	 168 lb/in. 120 lb/in. 12% 100%	 210 lb/in. 150 lb/in. 12% 100%	 252 lb/in. 180 lb/in. 12% 100%	20,000 lb
Tear Resistance (min. ave.)	D 1004	21 lb	28 lb	35 lb	42 lb	56 lb	70 lb	84 lb	45,000 lb
Puncture Resistance (min. ave.)	D 4833	45 lb	60 lb	75 lb	90 lb	120 lb	150 lb	180 lb	45,000 lb
Stress Crack Resistance *(4)*	D 5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI GM10
Carbon Black Content (range)	D 4218 *(5)*	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	20,000 lb
Carbon Black Dispersion	D 5596	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	45,000 lb
Oxidative Induction Time (OIT) (min. ave.) *(7)* (a) Standard OIT — or — (b) High Pressure OIT	 D 3895 D 5885	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	200,000 lb
Oven Aging at 85°C *(7), (8)* (a) Standard OIT (min. ave.) - % retained after 90 days — or — (b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5721 D 3895 D 5885	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	per each formulation
UV Resistance *(9)* (a) Standard OIT (min. ave.) — or — (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(11)*	GM11 D 3895 D 5885	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	per each formulation

(1) Of 10 readings; 8 out of 10 must be ≥ 7 mils, and lowest individual reading must be ≥ 5 mils; also see Note 6.

(2) Alternate the measurement side for double sided textured sheet

(3) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
Yield elongation is calculated using a gage length of 1.3 inches
Break elongation is calculated using a gage length of 2.0 inches

(4) P-NCTL test is not appropriate for testing geomembranes with textured or irregular rough surfaces. Test should be conducted on smooth edges of textured rolls or on smooth sheets made from the same formulation as being used for the textured sheet materials.
The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(5) Other methods such as D 1603 (tube furnace) or D 6370 (TGA) are acceptable if an appropriate correlation to D 4218 (muffle furnace) can be established.

(6) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(7) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(8) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(9) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(10) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(11) UV resistance is based on percent retained value regardless of the original HP-OIT value.

SI (METRIC UNITS)

Table 2(b) – High Density Polyethylene (HDPE) Geomembrane - Textured

Properties	Test Method	Test Value							Testing Frequency (minimum)
		0.75 mm	1.00 mm	1.25 mm	1.50 mm	2.00 mm	2.50 mm	3.00 mm	
Thickness mils (min. ave.) • lowest individual for 8 out of 10 values • lowest individual for any of the 10 values	D 5994	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	nom. (-5%) -10% -15%	per roll
Asperity Height mils (min. ave.) *(1)*	D 7466	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	every 2nd roll *(2)*
Density (min. ave.)	D 1505/D 792	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	0.940 g/cc	90,000 kg
Tensile Properties (min. ave.) *(3)* • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	 11 kN/m 8 kN/m 12% 100%	 15 kN/m 10 kN/m 12% 100%	 18 kN/m 13 kN/m 12% 100%	 22 kN/m 16 kN/m 12% 100%	 29 kN/m 21 kN/m 12% 100%	 37 kN/m 26 kN/m 12% 100%	 44 kN/m 32 kN/m 12% 100%	9,000 kg
Tear Resistance (min. ave.)	D 1004	93 N	125 N	156 N	187 N	249 N	311 N	374 N	20,000 kg
Puncture Resistance (min. ave.)	D 4833	200N	267 N	333 N	400 N	534 N	667 N	800 N	20,000 kg
Stress Crack Resistance *(4)*	D 5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	per GRI GM10
Carbon Black Content (range)	D 4218 *(5)*	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	2.0-3.0 %	9,000 kg
Carbon Black Dispersion	D 5596	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	note *(6)*	20,000 kg
Oxidative Induction Time (OIT) (min. ave.) *(7)* (a) Standard OIT — or — (b) High Pressure OIT	 D 3895 D 5885	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	 100 min. 400 min.	90,000 kg
Oven Aging at 85°C *(7), (8)* (a) Standard OIT (min. ave.) - % retained after 90 days — or — (b) High Pressure OIT (min. ave.) - % retained after 90 days	D 5721 D 3895 D 5885	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	 55% 80%	per each formulation
UV Resistance *(9)* (a) Standard OIT (min. ave.) — or — (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(11)*	GM11 D 3895 D 5885	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	 N.R. *(10)* 50%	per each formulation

(1) Of 10 readings; 8 out of 10 must be ≥ 0.18 mm, and lowest individual reading must be ≥ 0.13 mm; also see Note 6.

(2) Alternate the measurement side for double sided textured sheet

(3) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.
Yield elongation is calculated using a gage length of 33 mm
Break elongation is calculated using a gage length of 50 mm

(4) The SP-NCTL test is not appropriate for testing geomembranes with textured or irregular rough surfaces. Test should be conducted on smooth edges of textured rolls or on smooth sheets made from the same formulation as being used for the textured sheet materials.
The yield stress used to calculate the applied load for the SP-NCTL test should be the manufacturer's mean value via MQC testing.

(5) Other methods such as D 1603 (tube furnace) or D 6370 (TGA) are acceptable if an appropriate correlation to D 4218 (muffle furnace) can be established.

(6) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(7) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(8) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(9) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(10) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(11) UV resistance is based on percent retained value regardless of the original HP-OIT value.

Adoption and Revision Schedule
for
HDPE Specification per GRI-GM13

"Test Methods, Test Properties, Testing Frequency for
High Density Polyethylene (HDPE) Smooth and Textured Geomembranes"

Adopted:	June 17, 1997
Revision 1:	November 20, 1998; changed CB dispersion from allowing 2 views to be in Category 3 to requiring all 10 views to be in Category 1 or 2. Also reduced UV percent retained from 60% to 50%.
Revision 2:	April 29, 1999: added to Note 5 after the listing of Carbon Black Dispersion the following: "(In the viewing and subsequent quantitative interpretation of ASTM D5596 only near spherical agglomerates shall be included in the assessment)" and to Note (4) in the property tables.
Revision 3:	June 28, 2000: added a new Section 5.2 that the numeric table values are neither MARV or MaxARV. They are to be interpreted per the the designated test method.
Revision 4:	December 13, 2000: added one Category 3 is allowed for carbon black dispersion. Also, unified terminology to "strength" and "elongation".
Revision 5:	May 15, 2003: Increased minimum acceptable stress crack resistance time from 200 hrs to 300 hrs.
Revision 6:	June 23, 2003: Adopted ASTM D 6693, in place of ASTM D 638, for tensile strength testing. Also, added Note 2.
Revision 7:	February 20, 2006: Added Note 6 on Asperity Height clarification with respect to shear strength.
Revision 8:	Removed recommended warranty from specification.
Revision 9:	June 1, 2009: Replaced GRI-GM12 test for asperity height of textured geomembranes with ASTM D 7466.
Revision 10	April 11, 2011: Added alternative carbon black content test methods

RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS, 9/19/2013

From NMED Air Quality Bureau

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

"..Current requirements which may be applicable in this mining project include, but are not limited to, the following

20 NMAC 2.72 Permits must be obtained from the Department by:

(1) *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.*

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;"

Mt. Taylor Mine will comply with the Ambient Air Quality Standards of EPA and NMED "criteria pollutants" stipulated in 40CFR§50 and 20.2.3 NMAC.As defined by subsection P of 20.2.72.7 NMAC:

> *"Modification" means any physical change in, or change in the method of operation of, a stationary source which results in an increase in the potential emission rate of any regulated air contaminant emitted by the source or which results in the emission of any regulated air contaminant not previously emitted.*

The mine is an existing stationary source. An NMED Part 72 construction permit is required if <u>as a result of a modification</u>, facility emission rates could exceed 10 pounds per hour or 25 tons per year of the AAQS criteria pollutants [20.2.72.200.A(2) NMAC]. Tentatively, no modifications are planned that will result in such quantities of criteria pollutant emissions being emitted by mine operations. If modifications are needed in the future, the Mt. Taylor Mine will seek a Part 72 construction permit.

20 NMAC 2.73 Permits must be obtained from the Department by:
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 Mt Taylor Mine has no existing plans to construct a new stationary source with a potential emission greater than 10 tons per year of a regulated air pollutant or 1 ton per year of lead.

Fugitive dust

RGR will practice dust control on waste and ore piles by minimizing the size of exposed surfaces, consistent with operational limits, or by application of surfactants. Dust will be controlled in working areas and roads by watering, surfactants, and speed limits.

RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS AND UPDATED CLOSEOUT/CLOSURE PLAN, 7/15/2013

From EMNRD Forestry Division

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

I am concerned about the use of non-native plant species in the proposed reclamation seed mix, specifically the use of yellow sweetclover (Melilotus officinalis). This plant has shown to have a potential of spreading and invading rangelands, lowering native plant biodiversity, and is potentially toxic to livestock. I highly recommend removing this species from the reclamation seed mix.

The revegetation seed mix will be modified, with another species substituted for sweetclover.

In addition, I recommend the development of a weed management plan to address the management and eradication of invasive species once reclamation has taken place.

A weed management plan outline will be added to the CCP. This plan will be developed at least one year before mine closeout.

RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS AND UPDATED CLOSEOUT/CLOSURE PLAN, 9/04/2013

From Department of Game and Fish

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

Comments on Mine Permit Revision

We are concerned that the mine site is not adequately safeguarded to protect wildlife from injury and mortality during the standby period, and that these conditions may continue during operations and into the closeout period. Please ensure that permit conditions and reclamation requirements provide for the safeguarding of physical and chemical hazards.

A wooden step ladder was placed in the sump alongside the shaft decant pond after a dog was reportedly rescued out of the sump. The ladder does not provide adequate escape for wildlife. An expanded metal escape ramp would be more appropriate for this structure. Alternatively, the pond could be covered or screened. The decant pond itself is safe for wildlife, and would be suitable to leave in place after reclamation as a wildlife and livestock watering facility.

The incident in question involved a single occasion of a stray neighborhood dog, not wildlife. Note that no wildlife has encountered such a problem during the 23 years of inactivity at the mine. During operations, human and machine activity around the sump would discourage wildlife from approaching. Upon reclamation, the sump will be backfilled and original grade restored, as described in the CCP.

Big game animals are excluded from the water treatment area by an exclusion fence. However, several dead rabbits were observed at the bottom of the barium chloride treatment tanks. These tanks should be covered when not in use, and the bottom of the perimeter fence wrapped with small mesh material to exclude small to medium size animals. Department staff is available to assist with the design of exclusion or escape structures for specific mine features.

RGR has committed to installing a chicken-wire fence around the barium chloride treatment tanks. A covering of similar fencing material will be placed over each tank until mine reactivation, at which time the cover will be removed to provide access for maintenance and operations.

Recently published information indicates that, in addition to pits, ponds and tanks, open top vent stacks and other open vertical pipes can trap and kill large numbers of birds. The chillers, air compressor, electrical distribution and water treatment buildings, and other support facilities at the Mount Taylor Mine have many vent stacks and similar openings. Open top vertical pipes that cannot be removed, filled or capped should be screened using galvanized hardware cloth held in place by stainless steel hose clamps. After closeout, all remaining buildings, pits and other facilities should likewise be left in safe condition for wildlife.

The mine actually has few of the vent openings cited by DGF. RGR will apply the recommended hardware cloth covers to those vents and other openings where such measures will not compromise the functions of those openings or safety of personnel in the impacted work spaces.

During operations, treated mine water will be pumped through a 4.3 mile long 24-inch pipeline to a discharge point in San Lucas Canyon. Removing the pipeline at the end of mine life may cause some surface disturbance. NM 334 is a gravel road maintained by Cibola County which totals approximately 4.7 acres on the mine site. Removing contaminated soil from the roadway will disturb the surface during mine closeout. These mining-affected locations should be brought within the permit area or otherwise included in financial assurance calculations.

Restoration of the road is already included in the financial assurance calculation as recommended by this comment.

As required by NMED, Mt. Taylor Mine has implemented a stage 2 abatement plan to remediate perched water derived from a former wastewater lagoon. Part of the abatement plan involved the planting of tamarisk trees (a Class C noxious weed) south of the waste rock pile to help transpire contaminated water. The NM Department of Agriculture recommends that management decisions for Class C weeds be determined at the local level, based on feasibility of control and level of infestation. The abatement plan states that the tamarisks will be "eradicated" when no longer needed for remediation, but does not specify a schedule or method for doing so. Tamarisk and Siberian elms (another Class C noxious weed) have also become established in and around the water treatment ponds. Some, but not all, of the trees at the treatment ponds may be buried when the ponds are filled or covered. Permanent eradication of either species usually requires both physical and chemical treatments, with follow-up monitoring and treatment of root-sprouts for as long as five years. The closeout plan should include a detailed description of how these weeds will be removed and replaced with a native reclamation seed mix.

A weed management plan will be added to the CCP not less than one year before mine closeout begins. Eradication measures may include application of herbicides, mechanical removal, or burning. Specific measures will be selected at the time of eradication. The reclamation seed mix will be revised to include this comment as well as comments of other agencies about seed mix.

We have the following recommendations regarding the revegatation plan (Section C.5 in the Technical Specifications document):

1. Remove the non-native invasive yellow sweet-clover from the seed mix. List the particular species included in the "spring wildlflower mix."

Yellow sweet clover will be removed and a new species list will be submitted.

2. Conduct test-plot studies or otherwise demonstrate that two feet of cover over the treatment ponds will be adequate to prevent uptake of radium and uranium into the vegetation.

Upon reactivation, a cell on the waste pile will be prepared for contaminated sediments from the treatment pond, excavated in preparation for pond lining. These sediments contain the highest levels of radium on site. When this cell is filled with pond sediment and contaminated soil, a 2-ft thick clean-soil cover will be applied. This covered cell will be the test plot for both radon flux measurements and for vegetation and erosion resistance. A detailed plan for this test plot will be developed and submitted for approval by MMD prior to mine reactivation activities, as a condition of reactivation.

3. The revegetation plan should include some detail concerning the proposed monitoring methods for each reported parameter. If grazing is the post-mining land use, the productivity success standard should be at least 70% of the technical standard (NRCS Range Site Description). Measuring the percent of productivity contributed by individual species, as proposed, may not be a realistic or workable metric for diversity. Volunteer native perennial vegetation may be left in place if it meets the permitted success standards.

RGR will submit a modified revegetation and monitoring plan based on MMD's Closeout Plan Guidelines Attachment 2 - Revegetation Standards and Sampling Methods and Attachment 3 - Sample Revegetation Plan.

RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS AND UPDATED CLOSEOUT/ CLOSURE PLAN, 9/19/2013

From NMED Ground Water Quality Bureau

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

Comments on Mine Permit Revision

Section 3.1.1 – Apparent discrepancy in maximum loading capacity of resin.

A study performed in 2000 by Fluor Fernald for the Department of Energy using the same DOWEX 21K 16/20 resin demonstrated a loading of 0.27 pounds per cubic foot at the 30 ppb uranium discharge standard. At the Mt. Taylor Mine, there will be seven IX trains with two IX columns per train. In each train, the influent column is referred to as the "lead" column and the effluent column is referred to as the "tail" column. Given the particular configuration of the IX Plant columns and the flow rate pumped from the mine, engineering models performed by RGR predict the uranium loading in the tail columns will be 3.33% of the lead columns. Assuming that the resin in the lead columns would be loaded to the 0.27 lbs/ft^3 discussed in the Fluor Fernald study, the resin in the tail columns would be loaded to 0.009 lbs/ft^3 U. Mt. Taylor Mine IX Plant engineers expect typical maximum loading of 0.06 lbs/ft^3 in the lead columns and 0.002 lbs/ft^3 in the tail columns.

Reference:

Fluor Fernald (2000, September 29). Sutton, C., Glassmeyer, C., Bozich, S., *FEMP-2577, Ion Exchange Technology in the Remediation of Uranium Contaminated Groundwater at Fernald*, Fluor Fernald, Inc., Fernald Environmental Management Project, Cincinnati, OH.

Comments on Closeout/ Closure Plan

Section 4 and 4.3 – RGR should perform a thorough radiological survey of facilities retained at closure as well in order to document their radiological condition. In addition, RGR should perform a post-demolition radiological survey within the area of facilities in which radioactive material previously had been handled (e.g., flocculant treatment building, barium chloride treatment building, ion exchange building and mine water treatment pond hydraulic structures).

In July 2012, a comprehensive contamination survey was performed on surface structures at the mine. Contamination levels were found to be less than the limits specified for natural uranium in Table I of NRC Reg. Guide 1.86. The IX Plant and the other structures and equipment at the Mine Water Treatment Unit (MWTU) were not included in the survey.

Prior to decommissioning the MWTU, a radiological characterization survey will be performed using the Multiagency Radiation Survey and Site Investigation Manual (MARSSIM), or equivalent method.

Equipment and materials will be decommissioned and disposed or released in accordance with MARSSIM (or equivalent) criteria. After decommissioning, a final status survey will be performed that is consistent with MARSSIM (or equivalent) criteria. As a matter of course, retained buildings will be surveyed to document that residual levels are below release standards.

None of the buildings retained for post-mining use will include any that had been used for water treatment, the only facilities in which radionuclides would be handled or accumulated. Decommissioning of the IX Plant will be performed in accordance with the radioactive materials license in effect at the time. The flocculant treatment building and barium chloride treatment building do not contain or handle radioactive material.

The mine water treatment areas will be surveyed as part of the removal of pond sediments and burial of demolition debris. Section 4.4.3 states that

> "After demolition is complete and debris has been transported to the locations of staging or disposal on site, the site soils will be excavated to remove radiological contamination above the cleanup standard as derived from 40 CFR 192, 5 pCi/g Ra-226 above background in the top 15 cm (~6 inches) of soil. The technical specifications for contaminated soil earthwork are included in Appendix C."

Section 5.2 addresses cleanup and surveys along water courses. Section 5.3 discusses radiological monitoring during closeout/ closure. Radiological surveys are integral to clean-up of radiological contamination, being the means by which clean-up to the 6.8 pCi/g standard for soil is determined.

Section 4.1 - Since RGR can cite effectiveness of features that maintain hydrologic isolation among penetrated aquifers only for approximately 40 years, RGR will need to demonstrate that such effectiveness would be maintained for an indefinitely long time period under its proposed closure actions.

Forty years of demonstration is all that is available, and this time period exceeds that of many other periods of observation common to mining and industrial facilities. NMED does not provide any regulation, guideline or risk-based standard that describes what is adequate to "demonstrate" effectiveness, what "effectiveness" means in quantitative terms, or what NMED means by "an indefinitely long time". RGR nonetheless reaffirms that the shaft closure designs are very conservative with regard to public safety and protection of the aquifers against contamination from surface sources. Section 2.4.1 of the CCP explains the evidence that the shaft liner systems, including the concrete liners and grouted zone behind the liners, have been and remain effective in isolating the Pt. Lookout aquifer from the deep aquifers:

> "The hydrologic isolation of the shafts and the mine water from the Point Lookout aquifer is demonstrated by the difference in static water levels between the shafts and the Phase I dewatering wells in the Point Lookout aquifer; the shaft water levels are 820 feet below ground surface, or about elevation 6520, versus the water elevation of about 6780 in the Phase I wells in the Point Lookout aquifer. After 22 years without dewatering, this water level difference of 260

feet over a distance of 200-400 feet shows that there is no measurable hydrologic connection between the mine water (Morrison/ Recapture/Westwater) and the Point Lookout. Any connection would have equalized the water levels in the mine shafts to those in the Point Lookout by flow from the Point Lookout to the shafts during the time since pumping stopped. The isolation of mine water from the Point Lookout is also evident from the contrast in water quality between the mine water (Table 2.1) sampled in the 24-foot shaft and the Point Lookout water (Table 2.2) sampled in well 2A."

Section 4.2.1 – According to RGR's description, the conduit construction details are more similar to that of a well than to a shaft. Inasmuch as corrosion may compromise the integrity of the steel conduit casings, at closure these conduits should be grouted throughout the extent of the penetrated aquifers overlying the Westwater Canyon member using the tremie methods described in Section 4.2.2 and Appendix C…

RGR will grout the conduits for their entire depths using the same procedures as for the deep wells. The CCP will be modified accordingly.

Section 4.2.2 - The closeout/closure plan should include a figure that shows the location and aquifer of completion of all wells that are associated with the mining operations, and an accompanying table with the following information:

- *Well designation*
- *Year installed*
- *Total installed depth as both feet below ground surface and elevation above sea level*
- *Aquifer monitored*
- *Screened interval as both feet below ground surface and elevation above sea level*

It is not clear which wells were referenced by the sentence "These wells are too deep to be economically maintained.." and therefore would be plugged and abandoned… Additionally, RGR must address the final disposition of all wells associated with its mining operations, as would be identified on the map and table requested above.

Table 2.3, Section 3.3.2 and drawing # MT13-CL-04 (Appendix A) of the CCP contain most of the requested information. Table 2.3 has been modified (attached) to include the remaining requested information, and this revised table will be substituted for the Rev. 0 table.

Table 2.3 identifies which wells will be plugged and which will be retained for PMLU. Only the wells in the Pt Lookout aquifer will be retained; the other, deeper wells will be plugged.

Sections 4.2, 5.1.1, and 5.1.2 address the final disposition of wells. Note that the Phase I wells (to the Pt Lookout) are to be retained for PMLU and deeper wells plugged under the jurisdiction of the State Engineer. The shallow monitor wells of the abatement plan are under separate jurisdiction of NMED and will be plugged under the provisions of that plan.

Section 4.4.2 - RGR should present an evaluation of whether the implementation of alternative #1 ….with a cementitious slurry could provide greater long-term maintenance-free protectiveness to human health and environment.

Removal of pond sediments involves risk of spillage during excavation and transport to the shaft. Much of the pond sediment includes barium chloride, a potential contaminant to the Westwater aquifer if discharged as slurry into the shafts below the plug. Adding cement to a slurry mix would not contribute to plugging the shaft (due to dilution in the mine water) unless incorporated into the shaft plug, but the barium chloride could have a deleterious effect on the plug strength. RGR sees no benefit from use of cementitious slurry to long-term performance or to maintenance of the shaft plugs as a variant of alternative #1.

Section 4.4.2 – For waste material that has potential to impact ground water quality, NMED typically requires a minimum of 3-foot cover thickness comprised of material that will both minimize infiltration of incident rainfall into the underlying waste and resist erosion without maintenance.

As a result of consultation with MMD and NMED on 10/31/2013, RGR has agreed to remove the sediments that accumulated on the pond liners as part of closeout/ closure for disposal in a clay-liner cell in the waste pile. The pond liners will be cleared of sediment and surveyed until gamma readings across the cleaned liners average not more than 0.026 millirem/hour, the soil cleanup standard. The liners and pond basins will then be backfilled with radiologically clean debris and clean soil. Consequently, no cover will be needed over the reclaimed treatment pond area.

Sections 4.4.3 and 4.4.4 - For waste material that has potential to impact ground water quality, NMED typically requires a minimum of 3-foot cover thickness comprised of material that will both minimize infiltration of incident rainfall into the underlying waste and resist erosion without maintenance. Inasmuch as contaminated soils likely will be the topmost materials on these piles, adequate waste pile cover thickness and erosional resistance will be especially important in order to maintain protectiveness.

Section 4.4.2 of the CCP states that:

> "The waste pile characterization study (Kleinfelder 2012) showed that water infiltration is very low even in sandy waste rock, as indicated by low degree of soil saturation even without a soil cover. Therefore, the primary role of the cover, which drives the design thickness, is as a radon barrier."

The Kleinfelder study, which was accepted by NMED, investigated the existing waste pile for both infiltration of rainfall and leaching of contaminants. This study demonstrated that evapotranspiration offsets infiltration and there has been no impact to ground water via leaching from the existing pile.

Soil cover thickness plays no role in erosion resistance, which is achieved by a combination of slope length and grade, vegetative cover, and cover soil properties. To reduce erosional stresses on the cover, the waste pile slopes will be reduced to 1V:5H and progressively covered. A combination of vegetative cover and riprap will be applied to the cover for erosion protection. Existing volunteer vegetation on the

waste pile slopes and the 2-foot soil cover of the ore stockpile, observed in the field by NMED and MMD staff, is healthy, indicating anecdotally that two feet of soil cover over contaminated material will support a vegetative cover.

RGR understands that the 3-foot cover is a rule of thumb that is available to NMED as a default decision in the absence of site-specific data and engineering analysis. RGR has both the data and the analyses to support a two-foot cover design for the waste pile.

RGR proposes to create a clay-lined waste cell within the south waste pile, as part of mine reactivation, that will serve several purposes:

- Isolate contaminated old pond sediments removed prior to installation of geomembrane liners in the mine water treatment ponds
- Provide a field test for a 2.0 ft thick soil cover over the contaminated sediments and soils, to verify performance as a radon barrier and growth medium.
- Provide a test plot for revegetation methods and seed mixes

The lined waste cell will be located in the northwest quadrant of the waste pile at a nominal bottom elevation of 7340 ft. An illustration of this cell will be added to the permit revision application and to the CCP. The cell berms will be constructed above elevation 7340 using existing waste rock relocated from the west and north pile slopes as part of pile reshaping, as described in Section 4.4.4 of the CCP. The cell will be 1-1.5 acres in area, 5-8 feet deep, and lined with 1.0 ft of compacted clay soil. This cell will be constructed as soon as possible after the mine returns to active status and before any contaminated soils or pond sediments have been excavated. Once contaminated materials from mine reactivation have been placed in the cell, it will be covered with 2.0 ft of compacted clay, and the surface will be revegetated in accordance with the revegetation plan (CCP, Section 4.5 as revised in Rev. 1). The cell surface will be off-limits for additional waste disposal during the subsequent mining period (at least five years) to allow monitoring of cover integrity and vegetation success. However, mine waste rock and debris will continue to be added to other portions of the waste pile throughout mining operations. When the cover monitoring period is complete, mine waste may be placed on top of the waste cell through the remainder of the mine operating life or until the pile capacity has been reached.

If the waste cell has been determined to be successful, a second-generation cell of similar design will be placed near the top of the waste pile. This second cell will be the repository for contaminated pond sediments and soils excavated at mine closeout/ closure. The final waste pile soil cover will also cover this second waste cell.

Well No.	Year Installed	Closure Disposition	State Plane Coordinates (NAD 83)		Collar Elevation, Feet AMSL	Depth (Feet from surface)	Depth (Feet Elevation)	Casing/liner Size	Screened Interval (Feet Elevation	Aquifer in Screened Interval
			E	N						
1	1977	PMLU	2782628	1579416	7335	1118	6217	NA	6595-6445	Pt. Lookout
2	1977	Plug	2782597	1579115	7335	2920	4415	9 5/8” casing	4785-4415	Tres Hermanos/Dakota
2-a	1977	PMLU	2782745	1579221	7336	925	6411	NA	6586-6436	Pt. Lookout
3	1977	PMLU	2782796	1579006	7336	1150	6186	NA	6599-6445	Pt. Lookout
4	1977	PMLU	2783022	1578963	7345	1130	6215	NA	6595-6445	Pt. Lookout
5	1977	PMLU	2783257	1579033	7402	1172	6230	NA	6550-6400	Pt. Lookout
6	1977	PMLU	2783403	1579209	7395	1190	6205	8 5/8” casing	6550-6400	Pt. Lookout
7	1977	PMLU	2783377	1579450	7375	1125	6250	8 5/8” casing	6550-6400	Pt. Lookout
8	1977	PMLU	2783243	1579715	7341	1044	6297	8 5/8” casing	6550-6400	Pt. Lookout
9	1977	Plug	2782983	1579716	7333	2845	4488	9 5/8” casing	4795-4493	Tres Hermanos
10	1977	PMLU	2782748	1579622	7333	1065	6268	8 5/8” casing	6595-6445	Pt. Lookout
11	1977	Plug	2783246	1578843	7442	3028	4414	9 5/8” casing	4623-4393	Tres Hermanos/Dakota
12	1977	Plug	2783442	1579417	7414	2940	4474	9 5/8” casing	4623-4393	Tres Hermanos/Dakota
13	1977	Plug	2782068	1579376	7317	3815	3502	10 ¾” casing, 7” liner	4333-4283	Poison Canyon/ Westwater
14	1977	Plug	2782170	1578805	7331	3205	4126	10 ¾” casing, 7” liner	4283-4143	Westwater
15	1977	Plug	2782520	1578497	7339	3205	4134	10 ¾” casing, 7” liner	4283-4143	Westwater
16	1977	Plug	2782997	1578315	7388	3275	4113	10 ¾” casing, 7” liner	4283-4143	Westwater
17	1977	Plug	2783566	1578569	7492	3342	4150	10 ¾” casing, 7” liner	4283-4143	Westwater
18	1977	Plug	2783783	1578902	7495	3314	4181	10 ¾” casing, 7” liner	4283-4143	Westwater
19	1977	Plug	2783783	1579490	7449	3274	4175	10 ¾” casing, 7” liner	4283-4143	Westwater
20	1977	Plug	2783507	1579942	7381	3223	4158	10 ¾” casing, 7” liner	4443-4143	Dakota-Westwater
21	1977	Plug	2782967	1580148	7316	3184	4132	10 ¾” casing, 7” liner	4443-4143	Dakota-Westwater
22	1977	Plug	2782464	1579896	7302	3195	4107	10 ¾” casing, 7” liner	4283-4143	Westwater
SM-24-38	1977	Plug	2783008	1579116	7390	3535	3855	10 ¾” casing, 7” liner	4283-4143	Westwater
SM-24-43	1977	Plug	2782953	1579065	7347	3535	3812	10 ¾” casing, 7” liner	4283-4143	Westwater

*Well 2-a supplies domestic water from the Pt. Lookout Sandstone and is located approximately 200-300 feet west of the 24 ft shaft.

PMLU= Post-mining land use

See Drawing MT13-CL-02 and -04 for well locations.

RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS AND UPDATED CLOSEOUT/CLOSURE PLAN, 4/11/2013 AND 8/13/2013

From Office of the State Engineer

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

OSE Comments on Mine Permit Revision Application via letter on 8/13/2013

1. Section 1.3, pp3-4. RGR should provide an explanation of the authority for diverting water at pumping rates ranging from 6,451 to 19,354 acre-feet per year. RGR's revision 13-2 does not indicate what law, regulations, permit or license that would allow RGR to have such a large diversion. Section 1.3 mentions regulatory requirements for return to active status without addressing water rights.

RGR has sufficient rights to divert and use water in amounts necessary to support all mine dewatering and mining activities. RGR has the right to continue to dewater the mine in the amounts and locations of prior dewatering activities which commenced prior to enactment of the Mine Dewatering Act. In addition to the right to dewater the mine (which alone does not require or establish a water right), RGR also has rights to divert and use water based on Declarations filed by RGR's predecessors in 1977 and 1978 (B-516 and B-516(1)).

2. RGR should provide information about plans to use water rights associated with B-516 and B-516 (1) for the return to an active mining operation. In this proposed return to active status, RGR does not mention whether it will divert water using some or all of water rights associated with NMOSE file B-516 and B-516 (1).

RGR plans to utilize some or all of the water rights declared and established under B-516 and B-516(1) as may be necessary to support mining operations.

3. In order to avoid delays and prior to restart mine de-watering activities or other mining activities that use water, RGR should contact NMOSE Water Rights Division – District 1 Albuquerque for any changes to water rights as well as to follow reporting and metering requirements of existing water rights.

RGR will work with the OSE to ensure full compliance with all applicable OSE rules and regulations. At this time RGR does not anticipate any changes to its existing water rights necessary to support mining operations.

OSE Comments on Closeout/Closure Plan (CCP) via email on 4/11/2013

1. Section 2.3.2, Ground Water, pp7-8; and Appendix C, section C.3 -1.1. RGR presents some historical information on water level measurements possibly from the 1970s. In Appendix C, mention is made of the shaft (Morrison) 820 feet depth to water without citing the date of water level measurement. Elsewhere in this section it's unclear if all water level data represent 1970s or some other time period. Given the amount of time since pumping and cessation of dewatering, recent water levels would be more useful than the historical data for evaluating the plan's potential impacts on ground water resources. A table with locations, water levels and measurement dates (recent and decades ago) would assist multiple agencies concerned with water related issues.

This comment refers to RGR's Closure/Closeout Plan (CCP). RGR will compile an updated list of water levels, including a new set of measurements. This list will be submitted as part of an amendment to the CCP as well as the mine permit revision application.

2. Section 5.2, Shaft closure, pp19-20. RGR should state in the text that shafts will have surface plugs extending to 40 and 62 feet below the surface. Drawings in Appendix C show the detail, yet the text does not describe dimension of the plug.

This comment refers to the CCP, Section 4.1. That section will be edited to state the depth of the shaft plugs.

3. Section 5.2, Shaft closure, p20. RGR states that the shaft's concrete liner and pressure grouted annular seal of liner through water bearing formations, and that "…The effectiveness of these features, described in section 2.4.1, has not diminished over time and will not be compromised by shaft closure measures. The space within each shaft is isolated from the surrounding aquifers and is hydraulically connected only to the ore zone in the Recapture/Westwater." Have any measures been undertaken to verify the integrity of the 33-year old annular seal and concrete liner?

This comment refers to the CCP, Section 4.1. RGR's statement about liner integrity is supported by Section 2.4.1, which states in part:

> "The hydrologic isolation of the shafts and the mine water from the Point Lookout aquifer is demonstrated by the difference in static water levels between the shafts and the Phase I dewatering wells in the Point Lookout aquifer; the shaft water levels are 820 feet below ground surface, or about elevation 6520, versus the water elevation of about 6780 in the Phase I wells in the Point Lookout aquifer. After 22 years without dewatering, this water level difference of 260 feet over a distance of 200-400 feet shows that there is no measurable hydrologic connection between the mine water (Morrison/ Recapture/Westwater) and the Point Lookout. Any connection would have equalized the water levels in the mine shafts to those in the Point Lookout by flow from the Point Lookout to the shafts during the time since pumping stopped. The isolation of mine water from the Point Lookout is also evident from the contrast in water quality between the mine water (Table 2.1) sampled in the 24-foot shaft and the Point Lookout water (Table 2.2) sampled in well 2A."

Because the mine flooded after pumping ceased in 1990, the shafts are not accessible for direct measurements or testing of the shaft liners. This will be done as part of mine reactivation and before resumption of mining.

4. Section 1.2, Project Description, p2. Note that RGR estimates subsidence would be limited to 300 feet above mine workings. This vertical distance would potentially affect the overlying Dakota Sandstone aquifer. Based on RGR Figure 2.1, approximately 138 to 273 feet separate the top of the upper to lower Westwater Canyon Member sandstones from the top of the Dakota Sandstone. So, this section indicates the potential for subsidence to create hydraulic connection between the Westwater Canyon Member sandstones and the Dakota Sandstone.

This comment refers to Section 2.4 of the CCP. The estimate of subsidence was a worst case scenario based on the conservative assumptions that all of the ore bearing zone would be 1) mined completely, and 2) left open after mining. The purpose of that estimate was to show that, even in the most extreme case of 100 percent extraction of ore, subsidence would not cause settlements at ground surface. In reality, 100 percent extraction is not possible and is not reflective of RGR's actual plans. RGR expects that, with best current practices utilizing room-and-pillar mining with sand backfilling, the risk of subsidence will be minimized by leaving sufficient percentage of the ground unmined (pillars) in place to provide roof support. Also, much of the waste rock generated underground will be placed in mined space as backfill as an additional means of roof support, further minimizing subsidence.

Past mining was conducted based in part on input from hydrologists involved with operational planning. Approximately a million tons from the ore body was extracted without intersecting aquifers outside the Morrison units containing the target uranium deposit. Nonetheless, even after years of involvement by company hydrologists, RGR plans to enlist the services of outside groundwater hydrologists to provide RGR with independent expert evaluations of, among other things, the issues expressed in this comment prior to any resumption of mining activities.

5. Section 5.2.1, Conduits, p 21. RGR should provide more detail about the construction of the two vertical utility conduits. Were these 11.5-inch diameter steel conduits cemented in place? In what diameter borehole were these casings installed? Is the entire borehole cased? Does the 11.5-inch casing refer to an inside or outside diameter casing? Is there a basis for selecting a surface plug that is 18 feet in length in these conduits?

The section on conduits is 2.4.1 on page 9 and 4.2.1 of the CCP.

The conduits are 11.5 inches I.D., cemented in place in 12.5 inch diameter boreholes through the entire length of 3100 feet (north conduit) and 3200 feet (south conduit). At MMD's request, the entire length of each conduit will be grouted in the same way as the deep wells.

6. Section 5.2.2, Depressurizing and Deep Monitor Wells, p21; Appendix C –Section 2.3 Well Plugging; Table 2.3 and Table C.6.1. RGR proposes to plug 16 wells in accordance with 19.27.4 NMAC. RGR proposes a 4:1 cement to bentonite mix with some leeway to propose another mixture. In accordance with 19.27.4.30.C NMAC, all wells to be plugged require that a plugging plan of operation be

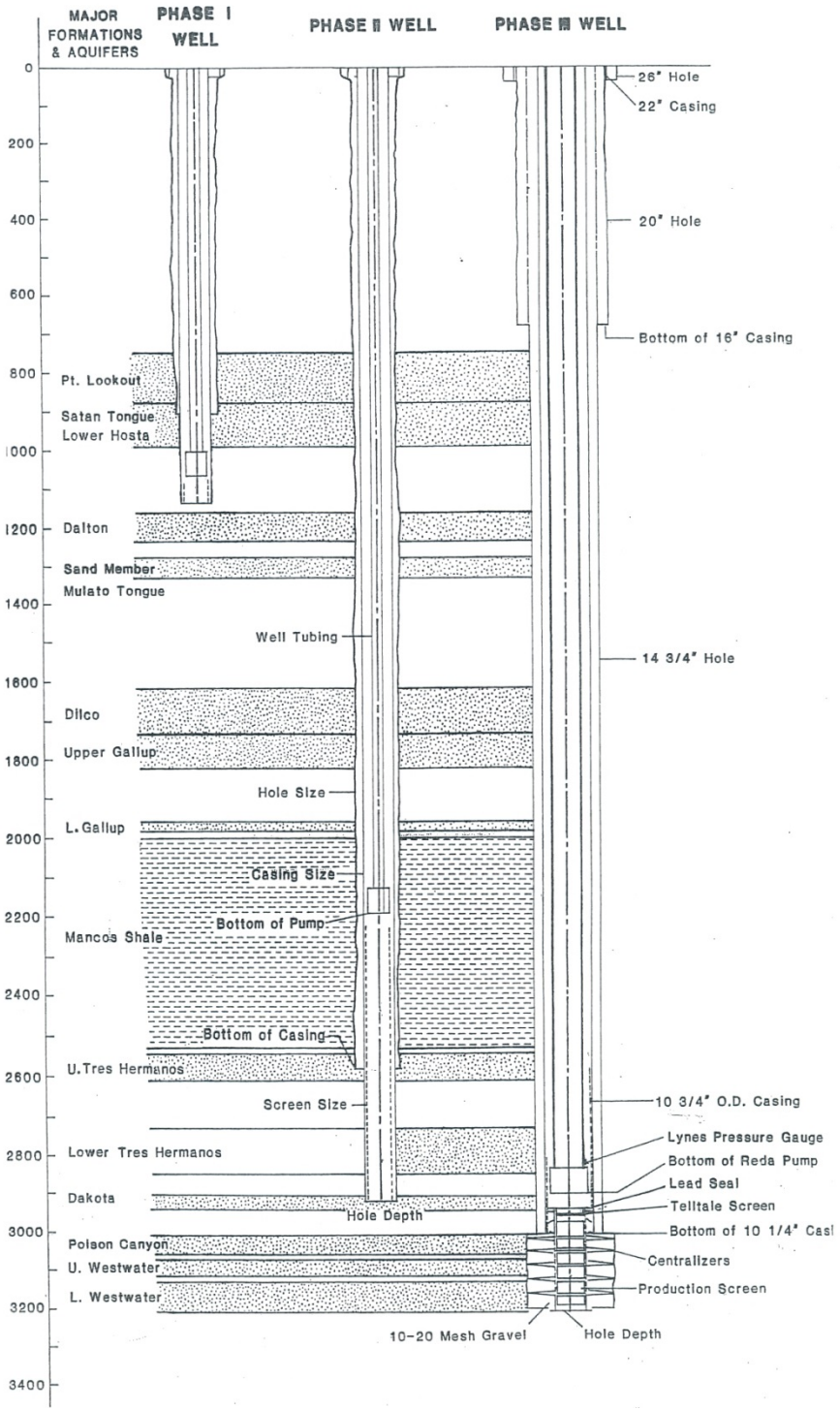
submitted to OSE for review and approval prior to plugging the well. Typically, cement based, bentonite based and mixtures of these sealants may be approved. However, note that the above cement to bentonite ratio is not sufficient to evaluate sealant mixture without more details such as the quantity of water for hydrating the sealant and specifications for sealant materials. Some deep wells may require more complex sequence of plugging than with shallower well casings. In addition to Table C.6.1 information, well construction details such as screened interval, borehole diameter, depth to water, and annular sealant are some of the considerations when evaluating a proposed plugging plan of operation. Plugging plan of operation form may be found on line at the following web link: http://www.ose.state.nm.us/PDF/WellDrillers/WD-08.pdf District 1 – NMOSE will evaluate the plugging plan. Jess Ward, District Supervisor, NMOSE District 1, 5550 San Antonio Dr. NE, Albuquerque, NM 87109-4127, (505) 383-4000.

This comment refers to Section 4.2.1 of the CCP. RGR expects that the deep wells will continue to function through the rest of the operating life of the mine. The attached figure "Typical Section of Dewatering Wells" illustrates the construction of these wells.

At least one year before cessation of mining, RGR will submit to the OSE a deep well plugging plan on OSE's Form WD-08 that will include:

- Sealant design including ratios and material specifications of seal components.
- Well construction details – borehole and casing diameters, screen types and intervals
- Depth to water
- Casing annulus seal description
- Plugging steps
- Documentation and reporting of well plugging

MT. TAYLOR MINE
TYPICAL SECTION OF DEWATERING WELLS



RESPONSES TO COMMENTS ON MT TAYLOR MINE PERMIT REVISION 13-2 FOR STANDBY TO ACTIVE STATUS AND UPDATED CLOSEOUT/CLOSURE PLAN, 9/9/2013

From Department of Cultural Affairs Historic Preservation Division

Responses by Rio Grande Resources, 11/18/2013

(Agency comments is italics, RGR responses in regular font)

Comments on Application for Mine Permit Revision to Active Status

Reactivation of the mine has the potential to indirectly alter the setting of the TCP, and introduce noise, lights and atmospheric elements that may adversely impact the use of the TCP by Native American tribes who continue to use the Mt. Taylor area for traditional and ceremonial activities.

The SHPO letter asserts that a consultation requirement is created by "[Section] 18-8-7 of the Prehistoric and Historic Sites Preservation Act [PHSPA], NMSA 1978." SHPO letter, at 2. This is mistaken. Section 18-8-7 pertains to the spending of public funds on projects using land from significant prehistoric or historic sites; it has no consultation component. *See id.* Moreover, Section 18-8-7 in any event applies only to "properties listed in the state register of cultural properties or national register of historic properties." *See* Section 18-8-3(C). Mt. Taylor is neither listed on the national register, nor appropriately listed on the state register after the State District Court reversed and remanded a prior listing of a "Mt. Taylor TCP" by the State Cultural Properties Review Committee ("CPRC"). The State District Court's ruling has been neither reversed nor stayed. Further, the application does not involve the spending of any public funds by an agency.

The SHPO letter makes recommendations regarding what it terms "cultural resources that may be eligible for listing on the State Register of Cultural Properties or the National Register of Historic Places." These recommendations assume incorrectly that the state's cultural property law regime recognizes properties that "may be eligible for listing." That is not correct. As discussed above, the PHSPA only applies to listed properties; it does not apply to properties eligible for listing. Properties that "may be eligible for listing" are not part of the state legislative scheme regarding agency consultation concerning historic or cultural properties.

The SHPO Letter also makes reference to "San Mateo Pueblo" as somehow implicating consultation requirements regarding the Application. Presumably, this is a reference to the San Mateo Archeological Site ("San Mateo Site"). However, the San Mateo Site is private property owned in part by RGR, and RGR has in fact specifically protected the San Mateo Site from any development and has no plans to disturb or otherwise impact the site. Moreover, just as is also the case with the incorrectly termed "Mt. Taylor TCP", the PHSPA does not apply to the San Mateo Site because the Application does not involve the spending of any moneys by any agency and because the Application does not require the

use of any significant prehistoric or historic site. Moreover, RGR notes that the Application does not request any land or structure modification, nor does the Application include any land located within the San Mateo Site.

The SHPO's reference to "the potential for significant archeological sites to be located within the mine permit boundaries" admits by its terms that any such speculative "potential" sites are in fact not listed sites. Again, properties that are not listed on either register are not part of the state legislative scheme regarding agency consultation concerning historic or cultural properties.

Notwithstanding all of the above, however, RGR has been willing and remains willing to engage in good faith consultations involving the SHPO and interested tribes regarding the Mt. Taylor Mine and the area in which it operates. The Mt. Taylor Mine first began exploration and development in the 1960s and has had a presence within the State since that time as a highly productive uranium mine. With regard to the specific concern addressed by this comment, it should be noted that Mt. Taylor Mine is an underground mine, so much of the noise, lights, etc., will occur underground or within the area of the limited surface facilities.

(A) review of our archaeological records database shows several significant archaeological sites located less than one mile from the mine. One of these sites includes San Mateo Pueblo, which is related to the internationally recognized resources at Chaco Culture National Historical Park. The presence of San Mateo Pueblo, which is listed on the State Register of Cultural Properties and included in the National Register of Historic Properties, raises the potential for significant archaeological sites to be located within the mine permit boundaries. These sites could be associated with San Mateo Pueblo or traditional cultural properties related to the use of Mt. Taylor.

An archaeological survey of the mine has not been conducted and activities associated with operation of the mine and closeout plan have the potential to affect unidentified significant archaeological sites. Drainage upgrades, installation of riprap and fencing, the removal of sediment on NM 334, proposed borrow areas and removal of facilities and the discharge pipeline are activities that have the potential to inadvertently damage cultural resources that may be eligible for listing on the State Register of Cultural Properties or the National Register of Historic Places. In order to prevent inadvertent damage to cultural resources, this office recommends that an archaeological consultant conduct an archaeological survey of any areas that may have the potential for unknown archaeological sites and determine whether ground disturbing activities associated with operation of the mine or close out plan will have an adverse effect.

See the comprehensive response provided above.