

**DISCHARGE PERMIT
RIO GRANDE RESOURCES CORPORATION, DP-1712
WATER TREATMENT PILOT STUDY
DATE**

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit, DP-1712, to Rio Grande Resources Corporation (RGRC) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants related to a water treatment pilot study (pilot study) at the Mt. Taylor Mine site that may move directly or indirectly into groundwater, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply and other uses; to protect those segments of surface waters that are gaining because of groundwater inflow; ensure that surface water quality standards are not being violated presently or will not be violated in the future; and to protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of 20.6.2.3109.C NMAC have been met.

Facility Description

The pilot study will be conducted at Rio Grande Resources Corporation's (RGRC) former uranium mine site. The mine operated on two separate occasions from 1979 to 1982 and from 1985 to 1990 before it was placed on stand-by in 1990. Alluvial groundwater contaminated by the former sewage lagoon and waste rock pile is currently being addressed under the New Mexico Water Quality Control Commission Regulations, DP-61. The mine site, permitted under DP-61 is currently not operating and is comprised of two mine shafts, an ion exchange treatment plant, a single waste rock pile, abandoned sewage lagoon, several clay-lined ponds formerly used to treat mine water produced as part of dewatering activities during mine operations, and associated equipment and structures.

DP-1712 addresses discharges of up to 14,400 gallons per day of treated mine water associated with a pilot test to determine the most efficient method for removal of uranium from mine dewatering water. The discharge from the pilot study may move directly or indirectly into groundwater. The pilot study involves the extraction of mine water from the Refrigeration Bench South well at a rate of 10 gallons per minute (gpm) for a maximum of 60 days, running the collected water through three different ion exchange resins to treat water to meet New Mexico Water Quality Control Commission standards, and discharging the treated water to the existing 14-foot diameter mine shaft for disposal.

Location of Discharge

RGRC's uranium mine site is the location of the pilot study and is located approximately 23 miles north of Milan in the east half of Sections 24, T13N, R8W, in Cibola County, New Mexico.

Quantity, Quality and Flow Characteristics of the Discharge:

The water that is being treated in the pilot study exceeds health-based water quality standards under WQCC Regulation 20.6.2.3103.A for uranium. The pilot study produces a maximum of 10 gpm of treated water and the maximum permitted discharge from RGRC's pilot study is 14,400 gallons per day for a maximum of 60 days.

Characteristics of Ground Water:

RGRC's mine site is situated over the San Mateo alluvial system. The depth of the alluvial ground water below the mine site ranges from approximately 25 to 30 feet below ground surface and currently has a total dissolved solids (TDS) concentration of approximately 5,700 milligrams per liter (mg/l). Pre-mining TDS concentrations in the alluvium are unknown as the Menefee formation was not saturated prior to the mine operation. Ground water in the alluvial system flows from the east below the site.

Deeper aquifers beneath the site are present in the following formations; Point Lookout, Crevasse Canyon (Lower Hosta sandstone), Gallup, Mancos (Tres Hermanos sandstone), and Morrison (Westwater Canyon Member).

General

RGRC's Discharge Plan for the pilot study consists of the Discharge Permit Application submitted on October 28, 2008 and additional information requested by NMED and received on March 23, 2009. The discharge shall be managed in accordance with the Discharge Plan as conditioned by this Discharge Permit.

Pursuant to 20.6.2.3109.E NMAC, NMED reserves the right to modify the permit requirements in the event NMED determines that the requirements of 20.6.2 NMAC are being, or may be, violated or standards of 20.6.2.3103 NMAC are being, or may be, violated. This may include a determination by NMED that operational practices approved under this Discharge Permit are not protective of ground and surface water quality, and that a modification is necessary to protect water quality or abate water pollution. Permit modifications may include but are not limited to lining or relining impoundments, changing discharge locations, changing waste management practices, expanding monitoring requirements and/or implementing abatement of water pollution.

Issuance of this Discharge Permit does not relieve RGRC of its responsibility to comply with all conditions or requirements of the WQA, WQCC Regulations, and any other applicable federal, state, and/or local laws and regulations such as zoning requirements and nuisance orders.

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. RGRC will be discharging effluent or leachate from their pilot study at the former uranium mining facility so that such effluent or leachate may move directly or indirectly into ground water within the meaning of 20.6.2.3104 NMAC.
2. RGRC will be discharging effluent or leachate from their pilot study at the former uranium mining facility so that such effluent or leachate may move into ground water of the State of New Mexico which has an existing concentration of 10,000 milligrams or less of total dissolved solids within the meaning of 20.6.2.3101.A NMAC.
3. The discharge from RGRC's pilot study at the former uranium mining facility is not subject to any of the exemptions of 20.6.2.3105 NMAC.
4. The pilot study will be located at the RGRC uranium mine site, which is a place of withdrawal of water for present or reasonably foreseeable future use within the meaning of the WQA, 1978 NMSA, §§74-6-5(E)(3), and the WQCC Regulations, Section 20.6.2.3103 NMAC.

III. PERMIT CONDITIONS

RGRC shall comply with the following conditions, which are enforceable by NMED.

OPERATIONS

1. RGRC shall conduct the operational requirements set forth below in accordance with the WQCC Regulations at Sections 20.6.2.3106.C and 3107 NMAC to ensure compliance with 20.1 and 20.2 NMAC. [20.6.2.3106.C and 20.6.2.3107 NMAC]

Treatment

2. RGRC shall treat the extracted mine water to below WQCC standards prior to discharging to the existing 14-foot mine shaft

Flow Description

3. RGRC shall purge the Refrigeration Bench South well at a maximum rate of 10 gpm for a total of 2 days and discharge the purge water at that same rate to the 14-foot diameter concrete-lined mine shaft via a two-inch diameter hose placed inside a six-inch diameter steel pipe. The water will be discharged into the 14-foot diameter shaft by free falling from the top of the mine shaft. Following purging of the Refrigeration Bench South well, RGRC shall initiate the pilot study. RGRC shall collect groundwater from the Refrigeration Bench South well at a rate of 10 gpm for a maximum of 60 days, place the water temporarily in a 1,000 gallon storage tank placed inside a larger open top tank for secondary containment, pump the

water to a header for distribution to the three treatment systems, run the water through the three treatment systems with different ion exchange resins for uranium removal, and discharge the treated water to the 14-foot diameter mine shaft in the same manner as the purge water. RGRC is authorized to discharge a maximum of 14,400 gallons per day for a maximum of 60 days from the mine site as part of the pilot study. [20.6.2.3109 NMAC]

Pipelines

4. RGRC shall inspect all conveyance pipelines daily while in service. [20.6.2.3109 NMAC]
5. Upon changing or discontinuing the use of any conveyance pipeline, all fluids within the pipeline shall be released to the 14-foot shaft or otherwise properly contained, transferred or disposed of in a manner that does not result in discharges to non-authorized areas. After emptying, the conveyance pipeline shall be rinsed or sectioned and thoroughly drained to ensure residual contaminants are removed. Discharges of fluids from conveyance pipelines in non-authorized areas must be reported under 20.6.2.1203 NMAC. Any changes in conveyance pipeline operations that result in removal of pipeline fluids in unauthorized discharge areas must be reported in accordance with Conditions 19 and 20 below. [20.6.2.3109 NMAC]

MONITORING, REPORTING AND OTHER REQUIREMENTS

6. RGRC shall conduct the following monitoring, reporting, and other requirements set forth below. [20.6.2.3107 NMAC]

Sampling and Field Measurements

7. Refrigeration Bench South Well and treated water – RGRC shall collect groundwater samples from the discharge pipe via a sampling port installed in-line prior to entering the header which distributes water to the three treatment systems to obtain pre-test water quality data. At the outlet of each treatment system there shall be a similar sampling port to collect post-treatment samples from each treatment system. Samples shall be collected analyzed for the parameters listed in Condition 13 every 9 days or more often if required to ensure contaminant levels are below WQCC standards prior to discharge. Analytical results shall be reported as required in Conditions 15 and 16 below. [20.6.2.3107 NMAC]
8. Ground Water Monitoring Wells – RGRC shall sample ground water and measure water elevations from monitoring wells WP-5, WP-4, and MW-5 before and immediately following completion of the pilot study. Samples shall be analyzed for parameters listed in Condition 14. Analytical results shall be reported as required in Conditions 16 and 17. [20.6.2.3107 NMAC]

9. Tank Inspection – Any time water is being pumped from the Refrigeration Bench South well, RGRC shall be onsite to monitor the filling operation of the 1,000 gallon storage tank and ensure that no leaks occur.
10. Pipe Inspection – RGRC shall inspect the pipe and tank secondary containment structures daily for leaks. [20.6.2.3107 NMAC]
11. Discharge Volumes - RGRC shall measure process inflows to the three separate treatment systems using a metering pump located at the output of the Refrigeration Bench South well and measure the discharge rate from the treatment systems via an in-line flow meter placed in the discharge pipe. Confirmation of meter installation, type, calibration to within 10% of actual flow and locations shall be submitted to NMED prior to discharge. Flow measurements shall be reported in the monitoring report as required in Conditions 15 and 16. [20.6.2.3107 NMAC]
12. 14-Foot Diameter Shaft – RGRC shall measure water levels in the 14-foot diameter shaft and ensure that water levels do not rise to saturate the Menefee Sandstone via the unlined drift at 700 feet below grade.

Analysis

13. RGRC shall analyze both untreated and treated samples of ground water for the specific parameters listed below. Samples of ground water from the Refrigeration Bench South well, prior to being diverted to the treatment cells, shall be analyzed for dissolved concentrations of the metal parameters and general chemistry parameters listed below. [20.6.2.3107 NMAC]

Group 1: General chemistry parameters: sulfate and total dissolved solids.

Group 2: Metal parameters: selenium, molybdenum, and uranium.

Group 3: Radionuclide parameters: radium 226, radium 228, and uranium [20.6.2.3107.A NMAC]

Methodology

14. Unless otherwise approved in writing by NMED, RGRC shall conduct sampling and analysis in accordance with the most recent edition of the following documents:
 - a. American Public Health Association, *Standard Methods for the Examination of Water and Wastewater*.

- b. U.S. Environmental Protection Agency, *Methods for Chemical Analysis of Water and Waste*.
- c. U.S. Geological Survey, *Techniques for Water Resource Investigations of the U.S. Geological Survey*.
- d. American Society for Testing and Materials, *Annual Book of ASTM Standards, Part 31, Water*.
- e. U.S. Geological Survey, et al., *National Handbook of Recommended Methods for Water Data Acquisition*.
- f. Surface water monitoring must also be conducted according to test procedures approved under Title 40 CFR Part 136. [20.6.2.3107.B NMAC]

Reporting

- 15. RGRC shall submit to NMED a report containing information collected during the pilot study within two months following the completion of the pilot study. The report shall include results of all monitoring tasks described in Conditions 6 through 12 above. [20.6.3107 NMAC]
- 16. RGRC shall submit the report in the format summarized below. This requirement includes but is not limited to:
 - a. A summary of all activities related to the discharge during the pilot study. Examples are: Section 20.6.2.1203 NMAC reportable spills during the pilot study, general operations, discharge volumes, changes in daily flow rates, maintenance, repairs, closure, water management, construction of structures, water quality and water level trends.
 - b. A ground water sampling and depth to water table that includes a summary of monitoring data (referred to as the data table) and a map of the facility with the associated extraction well and discharge location. The data table will be in the format described, as follows, or at a minimum include all the following information. A single table in a paper and electronic format (EXCEL spreadsheet) of water quality data with only those parameters analyzed and water levels measured during the pilot study shown in columns. Monitoring locations shall be shown in rows. Values exceeding standards shall be bolded. Any constituent not analyzed for particular location shall be shown as “NA”, any location not sampled shall be shown as “NS” with an associated reason, and any location not measured for water levels shall be shown as “NM” with an associated reason.

- c. Copies of signed laboratory analyses sheets.
- d. A section describing all pipeline movement, removal, repairs or closure. Details must include the date, approximate location and length of the affected pipeline.
- e. Time-series plots for all monitoring points shall be submitted in the report.
- f. Discharge volumes to the 14-foot diameter shaft.
- g. A description of any repairs completed during the pilot study.

CONTINGENCIES

17. If groundwater monitoring conducted under DP-61 indicates that the pilot study is causing groundwater contamination or adding to existing contamination, RGRC shall notify NMED and may be required to submit an abatement plan. If required, the abatement plan shall be conducted in two stages. Stage one of the abatement plan shall include a schedule to investigate all known areas of ground water and surface water contamination within the area covered by DP-1712 for the facility and define the extent and magnitude of ground water contamination in accordance with Sections 20.6.2.3109.E.1 or 20.6.2.4000 NMAC through 4115 NMAC. Stage two of the abatement plan shall address the selection of an abatement option to abate ground water contamination in the shortest reasonable timeframe and shall include an analysis of abatement alternatives pursuant to 20.6.2.4106.E NMAC. [20.6.2.3109.E.1 and 20.6.2.4000 through 4115 NMAC]

Operational Failures

18. If sampling shows that treated water does not meet WQCC standards prior to discharge or if the system fails in any way, the system shall immediately be shut down. In the event of a pipeline break, pump failure, shaft overflow, berm breach, or other system failure at the facility, all discharge water shall be contained, pumped and transferred to areas of the facility that impose minimal impacts to ground water quality. Discharges to areas serviced by the failed component shall not be placed back into service until repairs are made. [20.6.2.3107A (10) NMAC]

Spill Reporting

19. In the event of a spill or release that is not prescribed under this Discharge Permit, RGRC shall initiate the notifications and the corrective actions as required in 20.6.2.1203 NMAC. RGRC shall take immediate corrective action to contain and remove or mitigate any damage caused by the discharge. Within 24 hours after the discovery of the discharge, RGRC shall verbally notify NMED and provide the information required by 20.6.2.1203.A.1 NMAC. Within seven days of discovering the discharge, RGRC shall submit a written report to

NMED verifying the oral notification and providing any additional information or changes. RGRC shall submit a corrective action report within 15 days after the discovery of the discharge. [20.6.2.1203 NMAC]

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

CLOSURE

21. After the pilot study is complete, the treatment systems will be dismantled and the site will be returned to pre-pilot study conditions. All filter media and other consumables generated from the pilot study shall be removed from the site and disposed of properly.
22. RGRC shall submit a completion report that documents the closure activities performed following completion of the pilot study. [20.6.2.3107.A(11) NMAC]
23. When all post-closure requirements have been met, RGRC may request to terminate the Discharge Permit. [20.6.2.3107(A)11 NMAC]

GENERAL TERMS AND CONDITIONS

24. RGRC shall comply with the following general conditions, which shall be enforceable by NMED.

Record Keeping

25. RGRC shall maintain at its facility a written record of all data and information on monitoring of ground water, seepage, leaks, and meteorological conditions pursuant to this Discharge Permit including the following information [20.6.2.3107. NMAC]
 - a. The date, exact time, and exact location of each sample collection or field measurement;
 - b. The name and job title of the person who performed each sample collection or field measurement;
 - c. The date of the analysis of each sample;
 - d. The name and address of the laboratory and the name and job title of the person that reviewed the analysis of each sample;

- e. The analytical technique or method used to analyze each sample or take each field measurement;
 - f. The results of each analysis or field measurement, including the field sheets; and,
 - g. A description of the quality assurance and quality control procedures used.
26. Such data and information shall also be maintained on all split and duplicate samples, spike and blank samples, and repeat samples. [20.6.2.3107.A NMAC]
27. RGRC shall maintain a written record of any spills, seeps, or leaks of leachate or effluent not authorized by this Discharge Permit. [20.6.2.3107.A NMAC]
28. RGRC shall maintain a written record of the operation, maintenance and repair of all facilities/equipment used to treat, store, or dispose of wastewater; to measure flow rates; to monitor water quality; or, to collect other data required by this Discharge Permit. This record shall include repair, replacement or calibration of any monitoring equipment and repair or replacement of any equipment used in the conveyance of process waters throughout this permit area. [20.6.2.3107.A NMAC]
29. Notwithstanding any company record retention policy to the contrary, until such time as NMED determines that all closure measures have been completed in accordance with the requirements of this Discharge Permit, RGRC shall retain copies of all data, records, reports, and other documents generated pursuant to this Discharge Permit. Such record retention period may be increased by NMED at any time upon written notice to RGRC. [20.6.2.3107.A NMAC]
30. All such data, records, reports, and other documents generated pursuant to this Discharge Permit, shall be provided to NMED upon request. [20.6.2.3107.A NMAC]

Inspection and Entry

31. RGRC shall allow the Secretary or an authorized representative of NMED, upon the presentation of credentials to conduct the following tasks. [20.6.2.3107.D NMAC] [74-6-9.B and E WQA]
- a. Enter any property or premises owned or controlled by RGRC at reasonable times upon RGRC's premises or at another location where records are kept under the conditions of this Discharge Permit or any Federal or WQCC regulation.

- b. Inspect and copy, at reasonable times, records required to be kept under the conditions of this Discharge Permit or pursuant to State or Federal water quality regulations.
 - c. Inspect, at reasonable times, any facility, equipment (including monitoring and control equipment for treatment works), practices or operations regulated or required under this Discharge Permit or under any Federal or WQCC regulations.
 - d. Sample or monitor at reasonable times any effluent, water contaminant, or receiving water at any location before or after the discharge for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the New Mexico Water Quality Act.
32. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of the NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC]

Duty to Provide Information

33. Within a reasonable time after a request from the NMED, which time may be specified by the NMED, RGRC shall provide the NMED with any relevant information to determine whether cause exists for modifying, terminating, or renewing this Discharge Permit, or to determine whether RGRC is in compliance with this Discharge Permit. [20.6.2.3107.D NMAC] [74-6-9.B and E WQA]
34. Nothing in this Discharge Permit shall be construed as limiting in any way the information gathering authority of the NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107.D NMAC] [74-6-9.B and E WQA]

Spills, Leaks and Other Unauthorized Discharges

35. This Discharge Permit authorizes only those discharges specified herein. Any discharge not authorized by this Discharge Permit or any other RGRC Discharge Permit is a violation of the WQCC Regulations at 20.6.2.3104 NMAC. RGRC must report any such discharge to the NMED, and it must take corrective action to contain and remove or mitigate the damage caused by the discharge in accordance with Section 2.6.2.1203 NMAC and, if applicable, Condition 19 above. [20.6.2.1203 NMAC]

Modifications/Amendments

36. RGRC shall notify the NMED of any changes to its leachate or process water collection or disposal system, including any changes in the leachate or process water flow rate or the volume of leachate or process water storage, or processes that would result in any significant change in the discharge of water contaminants. RGRC shall obtain NMED approval, as a modification to this Discharge Permit pursuant to Section 20.6.2.3109.E, F, or G NMAC,

prior to any increase in the quantity leachate or process water discharged, or any increase in the concentration of water contaminants discharged, above those levels approved in this Discharge Permit. [20.6.2.3107 NMAC]

Enforcement

37. Any violation of the requirements and conditions of this Discharge Permit, including any failure or refusal to allow the NMED to enter and inspect records or facilities, or any refusal or failure to provide the NMED with records or information, may subject RGRC to an enforcement action. Pursuant to WQA § 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, suspending or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to the WQA §§ 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA § 74-6-5, the WQCC regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation standard, or order adopted pursuant to such other provision. For certain violations specified in the WQA § 74-6-10.2, criminal penalties may also apply. In any action to enforce this Discharge Permit, RGRC waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. RGRC does not waive any argument as to the weight such evidence should be given. [74-6-5, 74-6-10 WQA]

Compliance with Other Laws

38. Nothing in this Discharge Permit shall be construed in any way as relieving RGRC of its obligation to comply with all applicable Federal, State, and local laws, regulations, permits, or orders. [74-5-5.K WQA]

Liability

39. The approval of this Discharge Permit does not relieve RGRC of liability should the operation result in actual pollution of surface or ground water which may be actionable under other laws and/or regulations. [20.6.2.1220 NMAC]

Right to Appeal

40. RGRC may file a petition for a review before the WQCC on this Discharge Permit. Such petition must be made in writing to the WQCC within thirty (30) days after RGRC receives this Discharge Permit. Unless a timely petition for a review is made, the decision of NMED shall be final. [74-6-5.N WQA]

Transfer

41. Prior to any transfer of ownership, control, or possession of the permitted facility or any portion thereof, RGRC shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Permit with the notice. RGRC shall deliver or send by certified mail to the NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.2.3111 NMAC]

Term

42. The effective date of this Discharge Permit is the date it is issued and signed by the Chief of the Ground Water Quality Bureau. The term of this Discharge Permit is five (5) years, and the Permit will automatically expire five (5) years from the date it is issued or at the conclusion of the pilot study. To renew this Discharge Permit, RGRC must submit an application for renewal at least 120 days before that date. [74-6-5.H and 20.6.2.3109.H NMAC]

Issued this _____ day of _____, 2009

William C. Olson, Chief
Ground Water Quality Bureau
New Mexico Environment Department

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