

**STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION**



**IN THE MATTER OF THE PETITION FOR
ALTERNATIVE ABATEMENT STANDARDS
FOR THE FORMER ST. ANTHONY MINE,
CIBOLA COUNTY, NEW MEXICO**

No. WQCC 16-05 (A)

UNITED NUCLEAR CORPORATION,

PETITIONER.

**NEW MEXICO ENVIRONMENT DEPARTMENT'S
RESPONSE TO PETITION FOR ALTERNATIVE ABATEMENT STANDARDS**

Pursuant to the Water Quality Control Commission's ("Commission's") abatement regulations at 20.6.2.4103 NMAC, and the Commission's Adjudicatory Procedures at 20.1.3.300(A)(3) NMAC, the New Mexico Environment Department ("Department") hereby submits its response to the "Petition for Alternative Abatement Standards and Request for Hearing" for the former St. Anthony Mine, Cibola County, New Mexico ("Petition"). United Nuclear Corporation ("Petitioner") filed its Petition on December 19, 2016. The Petition requests Alternative Abatement Standards ("AASs") for the former St. Anthony Mine, which is located on the Cebolleta Land Grant approximately three (3) miles east-southeast of Moquino and approximately thirteen (13) miles north of Laguna Pueblo in Cibola County, New Mexico within the Grants Uranium Mineral Belt. The Department supports the requested alternative abatement standards and recommends that the Commission set a hearing and grant the Petition.

I. BACKGROUND

Petitioner operated a uranium mining operation on land owned by the Cebolleta Land Grant from 1975 to 1981 pursuant to a lease. The St. Anthony Mine site consists of two (2) open pits and one (1) underground mine. Of the two open pits at the St. Anthony Mine, only the large open pit

intersected groundwater within the Jackpile sandstone. The large open pit produced approximately two hundred eighty (280) tons of triuranium octoxide in 1979 and approximately two hundred eighty-eight (288) tons in 1980. The uranium ore bodies that were subject to mining, as well as associated uranium mineralized zones, occur within the Jackpile sandstone of the Morrison Formation. The Jackpile sandstone is saturated within the area of the St. Anthony Mine. Currently, the large open pit captures groundwater in the Jackpile sandstone via a cone of depression that has developed in response to evaporation of pit water. Water present within the large open pit and in monitoring wells outside the large open pit exceeds water quality standards for a number of constituents. The preferred abatement option of backfilling the large open pit, which emerged as a result of a multi-stakeholder process, will eliminate evaporation and subsequently result in the loss of groundwater containment. Therefore, as a component of implementing the preferred abatement option, it is necessary to impose a set of achievable AASs for contaminants present at the site within the Jackpile sandstone aquifer within the area of the St. Anthony Mine. The site is located in a sparsely populated rural area and is owned by the Cebolleta Land Grant. The owner of the site indicates there are no foreseeable plans for any future use of groundwater from the Jackpile sandstone for consumption.

Since 2004, the site has been under abatement pursuant to the WQCC's abatement regulations, sections 20.6.2.4000 through 20.6.2.4116 NMAC. Environmental site conditions have been fully characterized and the Stage 1 and Stage 2 phases of the abatement regulations in 20.6.2.4106 have been completed. Petitioner filed its modified Stage 2 Abatement Plan in February 2015, with a proposed abatement option that incorporates AASs to carry out the proposal. The Stage 2 Abatement Plan developed a set of Contaminants of Potential Concern ("COPCs") based on comprehensive screening and analysis in accordance with 20.6.2.4106 NMAC. The COPCs

developed for groundwater within the Jackpile sandstone at the site include uranium, radium ($^{226}\text{Ra} + ^{228}\text{Ra}$), fluoride, sulfate, total dissolved solids (TDS), boron, and chloride. Monitoring wells continue to show that groundwater is impacted by high levels of TDS, uranium, sulfate, and radium due to natural mineralization.

Implementation of the preferred abatement option of partial pit backfill with geochemical stabilization of sediments will result in a need for AASs for chloride, boron, sulfate, TDS, fluoride, uranium, and radium ($^{226}\text{Ra} + ^{228}\text{Ra}$). The proposed AASs for the site are 12.4 milligrams per liter (“mg/L”) for uranium, 2913 picocuries per liter (“pCi/L”) for radium ($^{226}\text{Ra} + ^{228}\text{Ra}$), 10.7 mg/L for fluoride, 77,000 mg/L for sulfate, 113,000 mg/L for TDS, 5.05 mg/L for boron, and 908 mg/L for chloride. Petitioner requests the AASs in perpetuity to facilitate site closure and development, with institutional controls proposed to ensure that no drinking water supply wells are placed in the Jackpile sandstone aquifer at the site. There are currently no drinking waters supply wells in the vicinity of the site.

II. STANDARD FOR GRANTING ALTERNATIVE ABATEMENT STANDARDS

Alternative abatement standards fall within the Commission’s authority to grant a variance from any requirement of the water quality regulations. Section 74-6-4(H) of the Water Quality Act provides that the Commission:

[M]ay grant an individual variance from any regulation of the commission whenever it is found that compliance with the regulation will impose an unreasonable burden upon any lawful business, occupation or activity. The commission may only grant a variance conditioned upon a person effecting a particular abatement of water pollution within a reasonable period of time. Any variance shall be granted for the period of time specified by the commission. The commission shall adopt regulations specifying the procedure under which variances may be sought, which regulations shall provide for the holding of a public hearing before any variance may be granted.

NMSA 1978, § 74-6-4(H).

The Commission's abatement regulations provide that a responsible person may submit a petition for approval of AAS any time after submission of a Stage 2 abatement plan. The Commission may approve the AAS if the petitioner demonstrates the following:

(a) compliance with the abatement standard(s) is/are not feasible, by the maximum use of technology within the economic capability of the responsible person; OR there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standards set forth in Section 20.6.2.4103 NMAC) to be obtained;

(b) the proposed alternative abatement standard(s) is/are technically achievable and cost-benefit justifiable; and

(c) compliance with the proposed alternative abatement standards will not create a present or future hazard to public health or undue damage to property.

20.6.2.4103(F)(1) NMAC.

An AAS petition must provide the information required under Subsection 20.6.2.4103(F)(2) of the abatement regulations, as well as that required for variance petitions under Subsection 20.6.2.1210(A) NMAC. 20.6.2.1210(A) NMAC requires that the petition:

- (1) state the petitioner's name and address;
- (2) state the date of the petition;
- (3) describe the facility or activity for which the variance is sought;
- (4) state the address or description of the property upon which the facility is located;
- (5) describe the water body or watercourse affected by the discharge;
- (6) identify the regulation of the commission from which the variance is sought;
- (7) state in detail the extent to which the petitioner wishes to vary from the regulation;
- (8) state why the petitioner believes that compliance with the regulation will impose an unreasonable burden upon his activity; and
- (9) state the period of time for which the variance is desired.

Subsection 20.6.2.4103(F)(2) NMAC requires that an AAS petition also specify

[T]he water contaminant(s) for which alternative standards(s) is/are proposed, the alternative standard(s) proposed, the three-dimensional body of water pollution for which approval is sought, and the extent to which the abatement standard(s) set forth in Section 20.6.2.4103 NMAC is/are now, and will in the future be, violated.

Under the Commission's Adjudicatory Procedures, the Department must review a petition for variance within sixty (60) days after receipt and file a recommendation with the Commission to grant, grant with conditions, or deny the petition. 20.1.3.300(B) NMAC. If the Department recommends granting the petition, the Commission must hold a public hearing on whether to grant the AAS petition.

III. DEPARTMENT'S RECOMMENDATION

The Department has reviewed the St. Anthony Mine Petition and recommends that the Commission grant the Petition in full. Because the Department recommends granting the Petition, the Commission must hold a public hearing. 20.1.3.18(B) NMAC. The Department and Petitioner both request a hearing, and ask the Commission to grant that request at the next Commission meeting. The Department and Petitioner request that the Commission refer this matter to a hearing officer to schedule the hearing, which the Department and Petitioner request to take place at that Commission's next meeting after the 2017 legislative session.

IV. REASONS

The Petition sets forth all the required information under 20.6.2.1210(A) NMAC (variance petitions) and 20.6.2.4103(F)(2) NMAC (alternate abatement standard petitions). The Department finds that Petitioner has made the demonstrations required for approval of alternate abatement standards under 20.6.2.4103(F)(1) NMAC, as discussed below.

A. Compliance with the applicable abatement standards is not technically achievable

Petitioner has demonstrated that the abatement standards at 20.6.2.3103 NMAC – 0.03 mg/L for uranium, 30 pCi/L for radium ($^{226}\text{Ra} + ^{228}\text{Ra}$), 1.6 mg/L for fluoride, 600 mg/L for sulfate, 1,000 mg/L for TDS, 0.75 mg/L for boron, and 250 mg/L for chloride – are not feasible using the maximum amount of technology within the economic capability of the responsible party. *See*

20.6.2.4103(F)(1)(a) NMAC. In order to meet the standards in 20.6.2.3103 NMAC, UNC would need to remove the mineralization that adversely impacts the quality of the groundwater in both the Jackpile sandstone and the large open pit. It is not technologically feasible to remove the rock that contains the groundwater, which would also necessitate removing all of the groundwater as well. This approach is not advisable, as it would be very costly and have a negative environmental impact.

B. The proposed AASs are technically achievable and cost-benefit justifiable

Petitioner has demonstrated the proposed AASs will be achievable after the backfilling of the St. Anthony Mine. The Natural Resources regulations for non-coal mining require that open pits be “reclaimed to a condition that allows for re-establishment of a self-sustaining ecosystem appropriate for the life zone of the surrounding areas following closure. . . .” 19.10.5.507(A) NMAC. To leave a pit open (as the large pit of the St. Anthony Mine currently is), the operator of the mine must apply for a waiver from the Director of the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department pursuant to 19.10.5.507(B) NMAC. A waiver may be granted if the following two criteria are met: (1) measures must be taken to ensure that the open pit meets all applicable laws, regulations, and standards for air, surface water, and ground water protection following closure; and (2) the open pit will not pose a current or future hazard to public health or safety.

It is unlikely that the St. Anthony Mine is capable of meeting either condition listed in 19.10.5.507(B) NMAC. The Petitioner has demonstrated that the large open pit will never meet the standards for groundwater in 20.6.2.3103 NMAC. Additionally, Petitioner will not be able to demonstrate that the large open pit does not pose a current or future hazard to public health or safety.

The areas around the pit are used for livestock grazing and watering. The large open pit poses a

danger both as a fall hazard for livestock and as a drinking water hazard should livestock and wildlife drink from the groundwater that seeps into the bottom of the large open pit. Backfilling the large open pit will be a net benefit for all other activities in the vicinity of the St. Anthony Mine.

C. The proposed AASs will not create a hazard to public health or undue damage to property

Predictive groundwater modeling and site investigation have established that there are no complete groundwater exposure pathways, nor will COPCs migrate away from the site. The hydrologic system for the Jackpile sandstone groundwater is highly constrained due to several factors, which Petitioner has outlined in its Petition. Local groundwater discharge to Meyer Draw (the location to which groundwater would flow in the event of pit backfill) via evapotranspiration in the Jackpile sandstone outcrop is more than sufficient to capture groundwater migrating through the St. Anthony Mine area. In the event the large open pit is backfilled, which would eliminate the current evaporative sink for groundwater, groundwater will not migrate from the site or impact any potential receptors. The Jackpile sandstone does not support water development in the areas surrounding the mine.

Finally, the Cebolleta Land Grant has no plans for future use of groundwater at the site. The Office of the State Engineer may reject an application for a domestic well permit when the proposed well is to be located in an area where water quality has been a concern or where a government entity has prohibited or recommended against the drilling of new wells. *See* 19.27.5.13 NMAC. If the Commission approves the AAS Petition, the approval would constitute the necessary government action to prevent future wells. The Department will petition the New Mexico State Engineer under 19.27.5.13(A) NMAC to issue an Order prohibiting construction of any wells in the affected water-

bearing zone of the Jackpile sandstone aquifer. The proposed AASs will therefore not create a future hazard to public health or damage property in the area.

VI. CONCLUSION

For the foregoing reasons, the Department recommends that the Commission grant the proposed alternate abatement standards as set forth in the Petition. The Department requests that the Commission appoint a hearing officer and proceed to schedule a hearing.

Respectfully submitted,

NEW MEXICO ENVIRONMENT DEPARTMENT

/s/ Annie Maxfield

Annie Maxfield
Assistant General Counsel
New Mexico Environment Department
121 Tijeras Ave. NE, Suite 1000
Albuquerque, New Mexico 87102
(505) 222-9592
Counsel for the New Mexico Environment Department

