

STATE OF NEW MEXICO  
WATER QUALITY CONTROL COMMISSION



IN THE MATTER OF THE PETITION FOR A  
VARIANCE TO APPROVE ALTERNATIVE  
ABATEMENT STANDARDS FOR THE PECOS  
MINE OPERABLE UNIT

WQCC 18-03(V)

Cyprus Amax Minerals Company,

Petitioner

**DECISION AND ORDER GRANTING  
ALTERNATIVE ABATEMENT STANDARDS**

This matter comes before the New Mexico Water Quality Control Commission (“WQCC” or “Commission”) upon the Petition for Variance to Approve Alternative Abatement Standards for the Pecos Mine Operable Unit (“Petition”) filed by Cyprus Amax Minerals Company (“Petitioner”) on April 27, 2018. A public hearing in this matter was held before the Commission on September 11, 2018. The Commission heard all evidence, deliberated, and voted to approve the Petition for the reasons set forth below.

**FINDINGS OF FACT**

**I. Procedural Findings**

1. On April 27, 2018, Petitioner submitted the Petition to the Commission requesting approval of alternative abatement standards for eight water contaminants for a defined three-dimensional area located on a portion of the Pecos Mine Operable Unit.

2. On May 8, 2018, the Environment Department (“NMED”) and Petitioner appeared before the Commission during its regular meeting to request a hearing on the Petition, with NMED indicating its intent to support the Petition. The Commission determined that a public hearing would be held on the Petition, and appointed Erin O.

Anderson, Administrative Law Judge for NMED, to serve as Hearing Officer pursuant to 20.1.3.10.B NMAC.

3. On June 27, 2018, NMED filed its Response to the Petition, in accordance with 20.1.3.18.A(3) NMAC, recommending that the requested alternative abatement standards be granted.

4. On August 2, 2018, the Hearing Officer issued a Scheduling Order pursuant to 20.1.3.18.C(2) and 20.1.3.16.B(2) NMAC, setting the hearing for the Commission's regular meeting on September 11, 2018.

5. Public notice of the hearing on the Petition, which notice expressly included the proposal for well restrictions to be issued by the State Engineer, was published and provided to interested persons as required by 20.1.3.18.C(2) and 20.1.3.16.C NMAC. The notice was published in the *Santa Fe New Mexican* and the *Las Vegas Optic* on August 10, 2018.

6. NMED and Petitioner filed statements of intent to present technical testimony during the public hearing. No other party filed a statement of intent or appeared at the hearing to present technical testimony.

7. A public hearing was held before the Commission on September 11, 2018 in Santa Fe, New Mexico, in accordance with the applicable procedures set forth in 20.1.3 NMAC. At the hearing, all persons were provided a reasonable opportunity to present evidence to the Commission and to conduct cross examination. The hearing was recorded by a court reporter who provided a transcription.

8. During the public hearing, three witnesses testified on behalf of Petitioner, one witness testified on behalf of NMED, and two members of the public appeared, cross-

examined some of the witnesses, and testified regarding their comments on the Petition. NMED and Petitioner both supported the granting of the Petition. The two members of the public who appeared did not oppose the granting of the Petition. During the public hearing, the following exhibits were admitted into evidence with no objection:

Petitioner's Exhibit A—Petition for a Variance to Approve Alternative Abatement Standards, prepared by Daniel B. Stephens & Associates, including all Appendices.

Petitioner's Exhibit C—Resume of Alicia Voss

Petitioner's Exhibit D—Resume of Neal Blandford

Petitioner's Exhibit E—Resume of Beth Salvas

Petitioner's Exhibit F—Administrative Order on Consent

Petitioner's Exhibit G—PMOU Long Term Operation and Maintenance Plan

Petitioner's Exhibit H—Example of notice letter to nearby landowners

Petitioner's Exhibit I—Affidavit of Publication in Santa Fe New Mexican

Petitioner's Exhibit J—Affidavit of Publication in Las Vegas Optic

NMED Exhibit 1—Testimony of Kurt Vollbrecht

NMED Exhibit 2—Resume of Kurt Vollbrecht

NMED Exhibit 4—Figure depicting area to which proposed alternative abatement standards would apply.

NMED Exhibit 5—Letter of Support from NM Dept. of Game and Fish

NMED Exhibit 6—April 26, 2017 Letter from State Engineer

9. At the conclusion of the public hearing, the Commission deliberated and voted unanimously to approve the Petition and authorized the Chairman to sign a written order to that effect.

## **II. Substantive Findings**

### **A. Findings of Fact**

1. The Pecos Mine Operable Unit (“PMOU”) consists of a reclaimed portion of the former Pecos Mine, sometimes referred to as the Terrero Mine, located along New Mexico State Highway 63, north of the Village of Terrero, and near the confluence of Willow Creek and the Pecos River in San Miguel County, New Mexico. The specific area proposed for alternative abatement standards consists of approximately 34 acres of land located in Sections 27 and 28, Township 18 North, Range 12 East on property owned by the New Mexico Game and Fish Commission. Petition for Alternative Abatement Standards, Petitioner’s Exhibit 1, at P. 4; Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 2, LL. 5-8.

2. There are two aquifers within the PMOU site: a shallow aquifer that occurs along the Pecos River and Willow Creek at less than 20 feet below ground surface, and an underlying regional aquifer that occurs in multiple bedrock units beneath the entire site. The affected water body consists of saturated alluvium/colluvium that occurs along the Pecos River and Willow Creek, and the underlying bedrock aquifer that exists below the saturated alluvium/colluvium and the reclaimed waste rock pile. Petition, Petitioner’s Exhibit 1, at P. 5 and section 4.1, PP. 21-24; Testimony of Kurt Vollbrecht, NMED Exhibit 1, P. 4 LL. 2-19.

3. In 1992, Petitioner and NMED entered into an Administrative Order on Consent (“AOC”) which required an investigation and remediation of the PMOU and other areas. In accordance with the AOC’s requirements, Petitioner conducted and NMED

approved a Remedial Investigation, Feasibility Study, and Decision Document documenting the investigation, evaluation of remedial alternatives, and NMED's decision requiring remediation of the PMOU. Petition, Petitioner's Exhibit 1, at 1-2; Testimony of Kurt Vollbrecht, NMED Exhibit 1, at 3; *See* Petitioner's Exhibit F.

4. Reclamation of the PMOU in accordance with the AOC, Decision Document, and plans submitted by Petitioner and approved by NMED began in 1999 and was completed in 2004. Since completion of that work in 2004, the site has been monitored to assess the performance of the work. The reclamation of the PMOU has met all the performance criteria set forth in the AOC and accompanying documents, with the exception of exceedance of the Commission's groundwater standards at 20.6.2.3103 NMAC in four monitoring wells. Petition, Petitioner's Exhibit 1, at P. 2; Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 3, LL. 18-21; Testimony of Alicia Voss, Hearing Transcript (TR), P. 26 L. 6 to P. 27, L. 25; Testimony of Neil Blandford, TR P. 40, L. 17 to P. 44 L. 19.

5. The Remedial Investigation, Feasibility Study, and Decision Document are the functional equivalent of a Stage 1 and Stage 2 Abatement Plan as described in the Commission's regulations at 20.6.2.4106.C and D NMAC. The Decision Document represents the remedy (i.e., abatement) approved by NMED for the PMOU based on the RI, the FS, and public comment. Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 4, L. 21 to P. 5, L. 16.

6. According to the Remedial Investigation, the primary source of the contaminants was the exposed waste rock piles, which contain multiple metals and acid-generating minerals. The Remedial Investigation indicated that infiltration of precipitation through, and runoff from, the waste rock piles was the primary mechanism for transport of

contaminants to downgradient soils, sediments, surface water, and groundwater. Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 4, L. 21 to P. 5, L. 16; *See* Petition, Petitioner's Exhibit 1, at Sections 4.1.1, 4.1.2, and 4.3.

7. The reclamation and remediation at the site included excavation and consolidation of all associated mine waste; installation of a geosynthetic clay liner and cover material; restoration of Willow Creek, riparian habitat and wetlands; revegetation of all disturbed areas; diversion of subsurface and surface water flows around the capped waste pile; and restoration of surface and ground water quality. This work was intended to do everything possible to try to eliminate the contact of water with waste materials, and as a result of the work, seeps of poor quality water have been almost entirely eliminated. Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 3, LL. 8-17; Petition, Petitioner's Exhibit 1, Section 3.2; Testimony of Neil Blandford, TR P. 40, L. 12 to P. 44, L. 6.

8. New Mexico's relevant numerical ground water quality standards set forth in 20.6.2.3103 NMAC are: 1.0 milligrams per liter (mg/L) for barium, 0.01 mg/L for cadmium, 1.6 mg/L for fluoride, 1.0 mg/L for iron, 0.2 mg/L for manganese, 1000.0 mg/l for total dissolved solids, 10.0 mg/L for zinc, and 0.05 mg/L for cobalt. 20.6.2.3103 NMAC.

9. Petitioner has proposed alternative abatement standards ("AAS") for the PMOU of 4.0 mg/L for barium, 0.10 mg/L for cadmium, 2.0 mg/L for fluoride, 40.0 mg/L for iron, 8.0 mg/L for manganese, 1,700 mg/L for TDS, 40.0 mg/L for zinc and 0.10 mg/L for cobalt. *See* Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 5, LL. 18-20; Petition, Petitioner's Exhibit 1, section 5.1; Testimony of Beth Salvas, TR P. 91, L. 7-19.

10. Petitioner provided a description and map of the area to be covered by the AAS, with the AAS to apply to a depth of 1,900 feet below ground surface. NMED has

approved that description and has provided the Commission with an Exhibit showing the area where the AAS will apply. Testimony of Kurt Vollbrecht, NMED Exhibit 1, P. 11, L. 5-11; *See* NMED Exhibit 4.

11. The AAS are requested in perpetuity, with institutional controls proposed to ensure protection of public health and property. The surface area of the PMOU is owned by the New Mexico Game and Fish Commission and managed by the Game and Fish Department, which issued a letter of support for the Petition that concurred with the restriction of well drilling in the affected aquifers. Under the terms of the AOC, the property to which the AAS will apply is subject to a Notice of Equitable Servitude indicating that property owners are subject to the continuing terms of the AOC. The Department will petition the New Mexico Office of the State Engineer (“OSE”) to issue an order under 19.27.4.13.A NMAC prohibiting construction of a well in the affected shallow and regional aquifers where the AAS will apply, as shown in NMED Exhibit 4, and additional regulations of the OSE will prevent construction of a water supply well in contaminated groundwater. The OSE provided a letter to confirm the process by which well restrictions can be implemented. Testimony of Kurt Vollbrecht, NMED Exhibit 1, at P. 5 LL 20-22, P. 9, L. 7 to P. 10 L. 12 and TR P. 162 L. 3 to P. 163, L. 4; *See* NMED Exhibits 4, 5 and 6.

12. Compliance with the AAS will not create a present or future hazard to public health or undue damage to property because exposure to the contaminants covered by the AAS will be prevented by the institutional and administrative controls outlined above and because there will be no adverse effects of granting the AAS on users of groundwater or surface water outside of the area covered by the AAS. Existing water supply wells in the vicinity of the PMOU have not been impacted by groundwater exceeding the standards of

20.6.2.3103 NMAC, and groundwater outside the area of the proposed AAS will continue to meet groundwater quality standards. Groundwater with contaminants exceeding groundwater quality standards will not travel or migrate outside of the area of the proposed AAS. Testimony of Kurt Vollbrecht, NMED Exhibit 1, P. 9 L. 1 to P. 10 L. 20. Petition, Petitioner's Exhibit 1, and 32-33; Testimony of Neil Blandford, TR P. 46 LL. 8-24 and P. 49, L. 17 to P. 50, L. 16.

B. Process and Requirements

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

14. Section 20.6.2.4103.F(1) NMAC of the Commission's abatement regulations provides that a responsible person may submit a petition for approval of AAS any time after submission of a Stage 2 abatement plan. As described above, Petitioner has completed the equivalent of a Stage 2 abatement process by conducting a remedial investigation and feasibility study in accordance with the terms of the AOC.

15. Pursuant to 20.6.2.4103.F(2) NMAC, a petition for AAS must identify the water contaminants for which alternative standards are proposed.

16. Pursuant to 20.6.2.4103.F(2) NMAC, a petition for AAS must identify the alternative standards proposed.

17. Pursuant to 20.6.2.4103.F(2) NMAC, a petition for AAS must identify the three-dimensional body of water pollution for which approval is sought.

18. Pursuant to 20.6.2.4103.F(1)(a) NMAC, a petitioner for AAS must demonstrate that compliance with the abatement standards in 20.6.2.4103.A NMAC is not



feasible, by the maximum use of technology within the economic capability of the responsible person, or that 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.

19. Pursuant to 20.6.2.4103.F(1)(b) NMAC, a petitioner for AAS must demonstrate that the proposed alternative standards are technically achievable and cost-benefit justifiable.

20. Pursuant to 20.6.2.4103.F(1)(c) NMAC, a petitioner for AAS must demonstrate that compliance with the proposed alternative standards will not create a present or future hazard to public health or undue damage to property.

21. Pursuant to 20.6.2.7.AA NMAC, a “hazard to public health” exists in the following circumstances: (1) water which is used or is reasonably expected to be used in the future as a human drinking water supply exceeds, at the time and place of such use, one or more of the numerical standards of Subsection A of 20.6.2.3103 NMAC, or the naturally occurring concentrations, whichever is higher; or (2) any toxic pollutant affecting human health is present in the water.

22. The Water Quality Act provides that the Commission may grant a variance from a regulation of the Commission for a period of time specified by the Commission. *See* NMSA 1978, § 74-6-4(H) (as amended through 2009).

23. Pursuant to 20.6.2.4103.F(2) NMAC, a petitioner for AAS must specify the information required for variance petitions under Subsection 20.6.2.1210.A NMAC, including, among other requirements, the period of time for which the variance is requested.

C. Requirements Met – 20.6.2.4103.F(1)(a) NMAC

24. The Petitioner has demonstrated that compliance with the abatement standards in 20.6.2.4103.B NMAC is not feasible, pursuant to 20.6.2.4103.F(1)(a) NMAC. Water Quality monitoring conducted since completion of the reclamation in 2004 show that while the reclamation has reduced seeps and improved water quality at the PMOU site, water quality in four monitoring wells continues to exceed 20.6.2.3103 NMAC standards, and contaminant levels have stabilized. There are no technically feasible methods that would result in attainment of the standards of 20.6.2.3103 NMAC for the contaminants for which AAS are proposed. Moreover, construction of a new system for additional remediation would compromise the source control remedy that has been effectively implemented. Petitioner has demonstrated that there is no reasonable relationship between the costs and benefits of continuing abatement and the social costs and benefits of doing so. Testimony of Kurt Vollbrecht, NMED Exhibit 1, PP. 6, LL. 1-14; Petition, Petitioner's Exhibit 1, Section 5.3, PP. 33-34; Testimony of Neil Blandford, TR. P. 48, L. 6 to P. 49, L. 13; *See* Petitioner's Exhibit G.

25. The proposed AAS are technically achievable and cost-benefit justifiable. Statistical analysis of monitoring data show that water quality trends have stabilized for most constituents following decreasing trends in the years following implementation of the remedy, the significant resources expended to implement the remedy have resulted in an effective source control measure, and implementation of other remedial alternatives are not feasible. Testimony of Kurt Vollbrecht, NMED Exhibit 1, P. 8, LL. 15-23; Petition, Petitioner's Exhibit 1, at section 4.4; Testimony of Beth Salvas, TR P. 86, L. 21 to P. 88, L. 22.

26. Petitioner has proposed the following institutional and government controls to prevent future use of the aquifers within the area to be covered by the AAS as a source of potable water in order to mitigate social costs from the proposed AAS:

- a. The property is owned by the State of New Mexico, Game and Fish Commission and is subject to the continuing requirements of the AOC and management under a Long Term Operation and Maintenance Plan.
- b. The Department will petition the New Mexico State Engineer under State Engineer regulation 19.27.5.13.A NMAC to issue an Order prohibiting construction of a well in the area to be covered by the AAS, as described in NMED Exhibit 4. The State Engineer has the required information and will issue the Order upon the Department's formal request.
- c. Additionally, the following rules further ensure that water from the aquifers located within the area to be covered by the AAS will not be used as source of potable water: The New Mexico State Engineer's regulations at 19.27.4 NMAC contain provisions that prevent construction of a water supply well in contaminated groundwater. *See* 19.27.4.29 NMAC (requiring wells to be constructed to prevent contamination, inter-aquifer exchange of water, flood water contamination of aquifer, and infiltration of surface water); 19.27.4.29.D NMAC (requiring that all wells be set back from potential sources of contamination in accordance with NMED regulations and other applicable ordinances and regulations); 19.27.4.30.A NMAC (requiring annular seals when necessary to prevent flow of contaminated or low quality water); 19.27.4.30.A(4) NMAC (requiring annulus sealing and proper screening in wells which encounter non-

potable, contaminated, or polluted water at any depth to prevent commingling of such water with any potable or uncontaminated water).

27. With the above institutional and government controls and requirements in place to prevent human exposure to or ingestion of groundwater from the two aquifers within the area to be covered by the AAS, the proposed AAS will allow the Department to close out the AOC, allowing for a reduction in the cost of monitoring and maintenance currently incurred by Petitioner and the State, subject to the continued maintenance of the property by its owner under a Long Term Operation and Maintenance Plan as required by the AOC. Therefore, the economic and social benefits of the proposed AAS (which include the above-described institutional and government controls), outweigh the benefits of continuing abatement which is unlikely to achieve 3103 standards.

D. Requirements Met – 20.6.2.4103.F(1)(b) NMAC

28. Petitioner has demonstrated that the proposed AAS have been achieved, and their approval will allow Petitioner to proceed with closeout of the PMOU obligations under the AOC. *See* Testimony of Kurt Vollbrecht, NMED Exhibit 1, at 8.

29. Petitioner has therefore demonstrated that the proposed AAS are technically achievable and cost-benefit justifiable.

E. Requirements Met – 20.6.2.4103.F(1)(c) NMAC

30. The institutional and government controls outlined above will prevent human exposure to or ingestion of the impacted groundwater from the two aquifers within the area covered by the AAS, rendering the AAS protective of public health. *See* Testimony of Kurt Vollbrecht, NMED Exhibit 1, at 9-10.

31. Petitioner has therefore demonstrated that the proposed AAS will not create a hazard to public health or undue damage to property.

F. Requirements Met - Other

32. Perpetuity is a reasonable period of time for the variance in this case due to the technical infeasibility of conducting further abatement, the controls that will be in place to prevent a hazard to public health, and the need to close out obligations under the AOC.

33. Petitioner has met the requirements of 20.6.2.4103.F(2) NMAC by: identifying the information required by Subsection 20.6.2.1210.A; identifying the contaminants for which alternative standards are proposed; identifying the three-dimensional body of water pollution for which the alternative abatement standards are sought; and identifying the extent to which the standards of 20.6.2.4103 are now, and will be in the future, violated.

**Conclusions of Law**

1. The Commission has jurisdiction to hear and decide this matter pursuant to NMSA 1978, § 74-6-4 (2009), 20.1.3 NMAC, and 20.6.2.4103 NMAC.

2. The Commission has jurisdiction over Petitioner and the PMOU site pursuant to the Water Quality Act, NMSA 1978, §§ 74-6-1 through -17, 20.1.3 NMAC, 20.6.2 NMAC and the AOC.

3. The Commission may take action to accept, modify, or deny Petitioner's petition for alternative abatement standards.

4. Petitioner has met all applicable requirements for the granting of alternative abatement standards in 20.1.3, 20.6.2.1210.A, and 20.6.2.4103.F NMAC.

5. The numerical values proposed in the Petition for the proposed alternative abatement standards are supported by substantial evidence in the record.

6. Approval of the proposed alternative abatement standards in perpetuity is supported by substantial evidence in the record.

**ORDER**

Based upon these Findings of Fact and Conclusions of Law, a quorum of the Commission renders the following decision and order:

IT IS THEREFORE ORDERED that:

1. The Commission approves alternative abatement standards for the Pecos Mine Operable Unit within the three-dimensional area as identified in NMED Exhibit 4.

2. The approved alternative abatement standards are as follows:

<b>Contaminant</b>	<b>Standard</b>
Barium (Ba)	4.0 milligrams per liter (mg/L)
Cadmium (Cd)	0.10 mg/L
Fluroride (F)	2.0 mg/L
Iron (Fe)	40.0 mg/L
Manganese (Mn)	8.0 mg/L
Total Dissolved Solids (TDS)	1,700 mg/L
Zinc (Zn)	40 mg/L
Cobalt (Co)	0.10 mg/L

3. The alternative abatement standards are granted in perpetuity.

4. As soon as practicable upon issuance of this Order, Petitioner and the Department shall take the necessary steps to implement the institutional controls proposed in the Petition, namely, the State Engineer well restriction order.

11/21/18

Date

A handwritten signature in blue ink, appearing to read "Larry Dominguez", written over a horizontal line.

Larry Dominguez, Chair  
Water Quality Control Commission

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the **Decision and Order Granting Alternative Abatement Standards** was sent to the following parties via the stated methods below on November 27, 2018:

*Via hand delivery and email:*

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Pam Castañeda, Commission Administrator