

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PROPOSED AMENDMENTS
TO 20.6.2, THE COPPER MINE RULE,

No. WQCC 12-01(R)

New Mexico Environment Department,
Petitioner.

**ATTORNEY GENERAL'S REPLY TO NMED IN SUPPORT OF ATTORNEY
GENERAL'S MOTION TO REMAND**

Preliminary Statement

While the intricacies of the proposed Copper Mine Rule might be complex, the critical issue posed by the proposed rule before the Water Quality Control Commission ("Commission") is straightforward. For over 35 years, the State of New Mexico has interpreted the Water Quality Act ("WQA") not to allow ground water contamination above water quality standards under a discharge site absent a convincing showing that the site is not a "place of withdrawal of water for present or reasonably foreseeable future use" or obtaining a variance or alternative abatement standards. For over 35 years, the State of New Mexico has interpreted the WQA not to have established a "point of compliance" regulatory regime for purposes of compliance with standards. For over 30 years, the State of New Mexico has considered that at least portions of copper mine sites are "places of withdrawal." The Commission agreed with each of these propositions in 2009.

The question now before the Commission is whether ground water underneath discharge sites that have present or future use may be contaminated above standards and whether compliance with standards may be established at more distant "points of compliance", as proposed by the Copper Mine Rule. The Commission does not need to take evidence or hold yet another lengthy hearing to determine that the Copper Mine Rule, as drafted, is inconsistent with

the WQA and, as well, that it would be a poor use of the Commission's limited resources to hold a hearing on the rule as presently proposed.

Argument

I. NMED MISCHARACTERIZES THE ATTORNEY GENERAL'S POSITION

NMED claims the Attorney General argues that the WQA's mandate that the Commission "adopt regulations to 'prevent or abate' water pollution means that all groundwater underneath a discharge site must meet ground water quality standards." NMED Resp., p. 1 (citation omitted). NMED's misrepresents the position of the Attorney General.

The Attorney General nowhere in his briefs takes the position that the requirement to promulgate regulations to "prevent or abate water pollution" requires any particular regulation to be promulgated. More importantly, the Attorney General does not take the position that all ground water under all discharge sites must meet standards.

The Attorney General's legal position is based, rather, on a reading together of a number of provisions in the WQA, beginning with Section 74-6-4(E)(3), which prohibits exceedences of ground water quality standards under any "place of withdrawal of water for present or reasonably foreseeable future use." That determination, as directed by the New Mexico Court of Appeals in *Phelps Dodge Tyrone, Inc. v. N.M. Water Quality Control Comm'n*, 2006-NMCA-115, ¶ 35, 140 N.M. 464, 473, 143 P.3d 502, 511, must be guided by "general factors or policies" developed by the Commission. The determination of whether a particular site or portion of a particular site is a "place of withdrawal" under the WQA is a site-specific determination, based on the criteria established by the Commission in the prior Tyrone proceeding, *In the Matter of Appeal of Supplemental Discharge Permit for Closure (DP 1341) for Phelps Dodge Tyrone, Inc.*, Nos. 03-

12(A) and 03-13(A).¹ The WQA, further, allows degradation of water quality, even at places of withdrawal, for beneficial use so long as water quality standards are not exceeded. NMSA 1978, § 74-6-12(F). The WQA allows for certain, limited exemptions to the Act's protections, such as that for irrigation and flood control facilities. *Id.* § 74-6-12(H). And, finally, the WQA allows for "individual variances" to Commission regulations if a regulation imposes an "unreasonable burden" on a discharger. *Id.* § 74-6-4(H).

The Attorney General's position is *not* that the proposed Copper Mine Rule violates the WQA because it does not protect all ground water (or "every drop of water", as the New Mexico Mining Association puts it) underneath copper mine sites. The Attorney General's position, as detailed in prior pleadings, is that the determination of whether a site constitutes a "place of withdrawal" under the WQA is necessarily a site-specific determination based, as the Court of Appeals directed, on factors or criteria. While the WQA sets forth limited exemptions, the Commission does not have the authority to exempt copper mining sites (or any other site) from compliance with water quality standards or to establish compliance at distant "points of compliance." As the Commission has found, the WQA "does not establish any specific 'point(s) of compliance' for compliance with water quality standards." Comm'n Decision, COL ¶ 27. Only the legislature, by amending the WQA, may promulgate such exemptions or establish a point of compliance regulatory system.

¹ The Commission held that the following factors must be considered in determining whether a particular site is a "place with withdrawal": site hydrology and geology, quality of water prior to discharge, past and current land use in the vicinity, future land use in the vicinity, past and current water use in the vicinity, and population trends in the vicinity. Comm'n Decision, COL ¶¶ 15-21.

II. THE 2009 AMENDMENTS DO NOT AUTHORIZE A POINT OF COMPLIANCE REGULATORY SCHEME

NMED claims that the Attorney General “carefully avoid[s] any analysis of the legislature’s 2009 amendments to the WQA”, arguing -- curiously -- that the Attorney General is “unwilling to accept” the amendments. NMED Resp., p. 3. NMED observes, correctly, that the 2009 amendments allow the Commission to promulgate industry-specific rules, and to provide certainty and specificity to permittees. *Id.*

NMED’s claim that the Attorney General has not taken the 2009 amendments into account is wrong. The Attorney General analyzed in detail the significance of the 2009 amendments in his Response to FMI’s Brief on the Commission’s Authority, pp. 7-11. The Attorney General hereby incorporates that analysis by reference.²

The 2009 amendments authorize the Commission to promulgate industry-specific rules, as NMED notes. The amendments do not authorize the Commission to allow blanket exemptions for specific industries to pollute above standards or authorize a point of compliance regulatory system, as proposed in the Copper Mine Rule. As is made clear, by reference to Arizona’s and Colorado’s statutes in the Mining Association’s response brief and the Attorney General’s reply, pp. 10-11, if a legislature intends to establish a point of compliance system, it does so by expressly authorizing such a system. There is no express or implied authorization in the New Mexico’s Water Quality Act.

There are many advantages to the promulgation of industry-specific rules, as required for the copper industry by the Legislature, as pointed out by NMED, FMI and the Mining Association. Industry-specific rules should result in more consistent, predictable and efficient

² In its brief, FMI asserted that the 2009 amendments diluted NMED’s authority to condition permits. The Attorney General explained in his Response why the amendments did not do so. AGO Resp. to FMI Brief, pp. 7-11.

permitting. And, indeed, there are many provisions in NMED's highly detailed Copper Mine Rules that will result in better permitting of copper facilities, and will benefit the environment, industry and regulators. The Attorney General supports many of those provisions in the proposed Copper Mine Rule.

III. THE PROPOSED COPPER MINE RULE ALLOWS EXCEEDENCES OF GROUND WATER QUALITY STANDARDS

A. NMED's Claim That the Proposed Rule Does Not Permit Exceedences of Standards Is Belied by the Plain Language of the Rule

NMED contends that proposed Section 20.6.7.21.B(1)(c) NMAC does not allow exceedences of ground water quality standards under waste rock stockpiles. NMED Resp., p. 5. NMED's contention is not correct.

Proposed Section 20.6.7.21.B NMAC appears in full in the footnote below.³ Under proposed Section 20.6.7.21.B(1) NMAC:

³ **B. Engineering design requirements for new waste rock stockpiles.** The following requirements shall be met in designing engineered structures for waste rock stockpiles at copper mine facilities that may generate water contaminants or acid mine drainage that may cause an exceedance of applicable standards, as determined through implementation of a material characterization and handling plan pursuant to Subsection A of 20.6.7.21 NMAC.

(1) **New waste rock stockpiles located outside an open pit surface drainage area.** New waste rock stockpiles located *outside an open pit surface drainage area* shall meet the following requirements *unless the department determines that deposition of waste rock, in accordance with an approved material handling plan prepared pursuant to Paragraph (2) of Subsection A of this Section, will not cause an exceedance of applicable standards.*

(a) Stormwater run-on shall be diverted or contained to minimize contact between precipitation run-on and the stockpiled material. The permittee shall prepare an engineering plan to limit the contact of run-on and stormwater with any materials that have the potential to generate water contaminants. The plan shall include, as necessary, design, construction, and installation of run-on, run-off, and stormwater diversion structures, collection of stormwater containing water contaminants, and a description of existing surface water drainage conditions. The plan shall consider:

(i) the amount, intensity, duration and frequency of precipitation;

(ii) watershed characteristics including the area, topography, geomorphology, soils and vegetation of the watershed; and

(iii) runoff characteristics including the peak rate, volumes and time distribution of runoff events.

(b) Drainage from the base of the waste rock stockpile shall be collected by headwalls keyed to bedrock, where applicable, and contained in impoundments located outside the open pit surface drainage area to be lined consistent with the requirements for containment of impacted stormwater.

- *No* protection against ground water contamination is required for *new* waste rock stockpiles located *within* an open pit surface drainage area, 20.6.7.21.B(1), -(2) NMAC (save diversion or containment of storm water run-on to minimize contact with the stockpiles, 20.6.7.21.B(2) NMAC).
- Synthetic liners are *not* required for *new* waste rock stockpiles located *outside* the open pit drainage surface area; all that is required is diversion of stormwater; collection of drainage into impoundments (that do not necessarily have to be synthetically lined, 20.6.7.17 NMAC); and installation and operation “where applicable” of “[i]nterceptor wells or other measures to reduce, attenuate or contain the discharge of leachate that may cause ground water to exceed applicable standards” 20.6.7.21.B(1)(a)-(c) NMAC.
- *No* protection for *new* waste rock stockpiles is required if NMED determines the stockpiles will not cause water quality standard exceedences. 20.6.7.21.B(1) NMAC.
- Compliance with water quality standards is to be measured “at a monitoring well located pursuant to 20.6.7.28 NMAC”, 20.6.7.21.B(1)(d) NMAC, that is, “around and downgradient of the perimeter” of the stockpile and the “solution capture and containment systems”, 20.6.7.28.B &- B(2) NMAC.

It is well documented and understood that waste rock stockpiles cause ground water contamination through acid rock drainage. Comm’n Decision, FOF ¶¶ 25-29, 37. The system contemplated by proposed rule would allow unlined waste rock piles to discharge water contaminants that may -- or may not be -- be captured through interceptor wells, with a monitoring system located at some undefined point outside the interceptor system. Furthermore, the purpose of the interceptor system is only to “reduce, attenuate or contain” the contaminants,

(c) *Interceptor wells or other measures to reduce, attenuate or contain the discharge of leachate that may cause ground water to exceed applicable standards shall be installed and operated where applicable.*

(d) If the permittee or the department determines that, with the measures described in Paragraphs (a) through (c) of this Subsection, discharges of leachate from a stockpile located outside of the open pit surface drainage area would cause ground water to exceed applicable standards at a monitoring well located pursuant to 20.6.7.28 NMAC, the permittee may propose, or the department *may* require as an additional condition in accordance with Subsection I of 20.6.7.10 NMAC, additional controls, including but not limited to, a liner system.

(2) **New waste rock stockpiles located *inside* an open pit surface drainage area.** Stormwater run-on shall be diverted or contained to minimize contact between stormwater run-on and the stockpiled material.

(Emphasis added.)

not to prevent contamination from occurring or abate contamination if it occurs. The system, quite plainly, allows ground water contamination above standards under new waste rock stockpiles.

Given these provisions, NMED cannot seriously contend that contamination above standards under new waste rock piles is not allowed under the proposed Copper Mine Rule. Indeed, NMED's expert contractor and technical staff from the Ground Water Quality Bureau ("GWQB") determined these provisions allow ground water contamination *in violation of the WQA*. As NMED's expert contractor stated in his September 7, 2012 memorandum to NMED management:

20.6.7.21(B) New Waste Stockpiles. Freeport proposed to change the language such that it would allow ground water contamination from new waste rock stockpiles so long as the contaminated ground water is captured. The Water Quality Act does not allow ground water contamination and without a variance *this would violate the WQA* so we retained our language.

Sept. 7, 2012 email from B. Olson to D. Martin, NMED [attached as Ex. J to AGO's Motion to Remand]. The Freeport language referred to above is the same language adopted by NMED in the proposed Copper Mine Rule.

NMED makes the same claim with respect to tailing impoundments -- that the proposed Copper Mine Rule does not allow contamination above standards under such impoundments. NMED Resp., p. 5. The proposed Copper Mine Rule, however, proposes to establish the same type of system for new tailing impoundments as for new waste rock stockpiles, which would also allow ground water contamination above standards.

Proposed Section 20.6.7.22.A(4) NMAC appears in full in the footnote below.⁴ Under

proposed Section 20.6.7.22.A(4) NMAC:

- Synthetic liners are *not* required for *new* tailing impoundments; only a drainage collection system and a seepage collection system with interceptor wells that “maximize seepage capture and efficiency” are required. 20.6.7.22.A(4)(a) NMAC.
- The interceptor wells must only “efficiently capture seepage such that applicable standards will not be exceeded at monitor well locations specified by 20.6.7.28 NMAC,” 20.6.7.22.A(4)(a)(vi) NMAC, that is, “around and downgradient of the perimeter” of the tailing impoundment and the “solution capture and containment systems”, 20.6.7.28.B &-B(2) NMAC.
- If NMED determines that a proposed impoundment would result in exceedences of ground water quality standards at “a monitoring well located pursuant to 20.6.7.28 NMAC,” “additional controls” “may” be required, that may or may not include liners. 20.6.7.22.A(4)(b) NMAC.

⁴ (4) **New tailings impoundments.** Tailings impoundments shall be designed according to the following requirements.

(a) The applicant shall submit design plans signed and sealed by a licensed New Mexico professional engineer along with a design report that describes how the following features were considered in developing the design plans:

(i) the annual volumes and daily maximum design rates of tailings and effluent to be deposited in the impoundment;

(ii) the topography of the site where the impoundment will be located;

(iii) hydrologic characteristics of the site, including depth to and quality of ground water;

(iv) the geology of the site;

(v) the design of drainage collection systems, to be proposed based on consideration of site-specific conditions and if drainage will be collected or will report at or above the ground surface;

(vi) the design of seepage collection systems, to be proposed based upon consideration of site-specific conditions where substantial seepage may report to ground water, including a design report that includes an aquifer evaluation to demonstrate that *interceptor wells will be able to efficiently capture seepage such that applicable standards will not be exceeded at monitor well locations specified by 20.6.7.28 NMAC.* The aquifer evaluation shall include a description of aquifer characteristics, hydrogeologic controls for seepage containment and capture, and an analysis of well spacing and capture rates. The interceptor well system shall be designed to *maximize seepage capture and efficiency:* and

(vii) a hydrologic analysis of drainage and seepage from the tailings impoundment based on the proposed design.

(b) If the permittee or the department determines that the proposed tailings impoundment, when operated in accordance with the design plan specified in Subparagraph (a) of this Paragraph, *would result in discharges of seepage or leachate that would cause ground water to exceed applicable standards at a monitoring well located pursuant to 20.6.7.28 NMAC,* the permittee may propose, or the department *may* require as an additional condition in accordance with Subsection I of 20.6.7.10 NMAC, additional controls, including but not limited to, a liner system.

(Emphasis added.)

It is well documented and understood that tailing impoundments cause ground water contamination through acid rock drainage. Comm'n Decision, FOF ¶¶ 25, 30-32. Again, the system contemplated by the proposed rule would allow new, unlined tailing impoundments to discharge water contaminants that may -- or may not -- be captured through a seepage collection system, with a monitoring system located at some undefined point outside the collection system. Furthermore, the seepage collection system is only required to "maximize seepage capture and efficiency," not to prevent contamination from occurring or abate the contamination if it does occur. The system for tailing impoundments, just like that for waste rock stockpiles, would allow ground water contamination above standards under new tailing impoundments.

NMED's expert contractor and GWQB technical staff made the same determination. The expert contractor stated in his September 7 memo:

20.7.7.22.4(A) New Tailing Impoundment Facilities. Freeport proposed to change the language such that it would allow ground water contamination from new tailing impoundments so long as the contaminated ground water is captured. The Water Quality Act does not allow ground water contamination and without a variance *this would violate the WQA* so we retained our language.

(Emphasis added.) NMED's claim that the proposed Copper Mine Rule does not allow ground water contamination under tailing impoundments is disingenuous.

B. The Language from the Proposed Copper Mine Rule Is Clear on Its Face; Evidence Is Not Necessary to Interpret the Provisions

NMED claims that evidence adduced at a hearing is necessary to understand how the proposed rule operates. NMED Resp., p. 6. First, the proposed rule should be clear enough on its face to interpret, without the need to resort to reams of expert testimony and complicated documents from a hearing record. The proposed rule is intended to guide NMED in its permitting and mining companies in their operations; it must be understandable on its face.

Second, the proposed rule – while highly detailed and complex – nonetheless plainly allows for ground water contamination above standards under mine sites and for compliance to be determined pursuant to a point of compliance framework, as any fair analysis of the rule shows. The Commission does not need to take evidence to understand how the rule operates in this respect. The rule is not consistent with the WQA, and the Commission should remand it to NMED to develop a rule that complies with the WQA.

C. NMED Discharge Permits Have Not “Allowed” Ground Water Contamination

NMED, without any factual support, contends that the agency “has a long-standing history of issuing discharge permits allowing groundwater standards to be exceeded at certain, discrete locations within a mine site.” NMED Resp., p. 2. This contention flies in the face of the sworn testimony given by many NMED technical staff during weeks of hearings in the Tyrone matter, and is reckless. Attached as Exhibit A is the testimony of the former Program Manager of the GWQB’s Mining and Environmental Compliance Section. Ms. Mary Ann Menetrey details the history of permitting of the Tyrone facility in which discharge permits were issued over a 30 year period based on representations from Tyrone that its operations would not contaminate ground water. Menetrey Test. pp. 3-16; *see also* Comm’n Decision, FOF ¶¶ 15-19, 84-86. The discharge permits all contained conditions to prevent ground water pollution and all contained conditions to require abatement in the event ground water pollution occurred. Throughout 24 days of hearing, no witness was able to identify a single discharge permit that allowed ground water contamination above standards under a discharge site. *Id.* FOF ¶ 76. As Bill Olson -- former long-time member of the Commission, GWQB Chief, and NMED’s expert contractor – testified, “NMED’s practice for the last 21 years [since 1986] has been to ensure *all*

ground water underneath a discharge site meets water quality standards.” See FOF ¶ 83 (emphasis added). While it is sadly true that Tyrone’s mining operations have resulted in extensive ground water contamination, it is not as the result of “long-standing” approval from NMED.

IV. THE COMMISSION HAS AUTHORITY TO REMAND THE PROPOSED RULE

NMED argues that the Commission does not have authority to “remand” the rule to NMED. While there is no express authority for the Commission to “remand”, the Commission does have wide discretion to deny NMED’s petition under Section 74-6-6(B) of the WQA. Its discretion is so broad, that any denial is not subject to judicial review. Implied within the authority to deny is the authority to remand to NMED.

In any event, the difference is one of semantics. If the Commission denies the petition, then, under the 2009 amendments, NMED must begin again with the stakeholder process to develop a copper mine rule. NMSA 1978, § 74-6-4(K). Whether the Commission denies NMED’s petition and NMED begins the process of developing a revised rule or whether the Commission remands the petition to NMED to develop a revised rule, there is no difference in substance between these two actions.

Conclusion

For the reasons set forth herein and in the Attorney General’s Motion to Remand, the Commission should remand NMED’s Copper Mine Rule Petition to NMED with direction to develop a rule, in conjunction with the Copper Rule Advisory Committee, that complies with the WQA.

Respectfully submitted,

GARY KING
ATTORNEY GENERAL OF NEW MEXICO

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Certificate of Service

I certify that the following were served with the foregoing pleading by email on January 25, 2013:

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

**IN THE MATTER OF)
APPEAL OF SUPPLEMENTAL DISCHARGE)
PERMIT FOR CLOSURE (DP-1341) FOR)
PHELPS DODGE TYRONE, INC.,)
Petitioner.)
_____)**

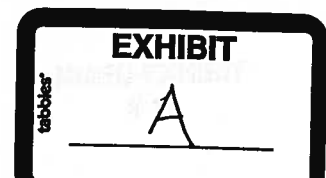
**Docket Nos.
WQCC 03-12(A)
WQCC-03-13(A)
(Consolidated)**

WRITTEN TESTIMONY OF MARY ANN MENETREY

My name is Mary Ann Menetrey, and I am the Program Manager of the Mining Environmental Compliance Section of the Ground Water Quality Bureau (GWQB) of the New Mexico Environment Department (Department). I am presenting this written testimony on behalf of the Department in the proceeding on the appeal of the Supplemental Discharge Permit for Closure, DP-1341 (Closure Permit or DP-1341) for the Phelps Dodge Tyrone, Inc. (Tyrone) open-pit copper mine (Tyrone Mine) located in Grant County, New Mexico. The matter is before the New Mexico Water Quality Control Commission (Commission) on remand from the New Mexico Court of Appeals. My written testimony is marked as NMED Exhibit 11.

I. Educational Background and Work Experience

I have held the position of Program Manager of the Mining Environmental Compliance Section since May 2000. As Program Manager, I oversee all aspects of ground water discharge permitting under the Water Quality Act (WQA or Act) and Commission Regulations, 20.6.2 NMAC, for mining operations, including the review of discharge permit applications, issuance of discharge permits, approval of closure plans, abatement of contaminated ground water, and enforcement of the Act and Commission Regulations. I am therefore very familiar with the requirements of the WQA and the Commission's Regulations. The Mining Environmental Compliance Section has responsibility for approximately 50 discharge permits issued to mine



sites in the State. My duties as Program Manager also include overseeing and administering Administrative Orders on Consent for mine sites which have been proposed to the United States Environmental Protection Agency's National Priorities List of Superfund Sites. These sites include the Chino Mine, Questa Mine, Terrero Mine, and Blackhawk Mine. Investigation and cleanup of these mine sites is being conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). I am also the Mining Act Team Leader for the Department, and am therefore responsible for coordination of the Department's role implementing the New Mexico Mining Act (Mining Act). I have provided technical review of permit applications and reclamation plans submitted pursuant to the Mining Act for over 60 mining and mining exploration operations to ensure that reclamation activities are protective of water quality. I supervise a staff of 11 persons, including 10 technical staff.

Prior to my current position, I worked in the Ground Water Pollution Prevention Section of the GWQB for over six years as a Surface Mining Reclamation Specialist providing review and oversight of ground water discharge permits, including closure plans, for numerous mining operations, including the Tyrone Mine. In addition to evaluating mine closure and reclamation plans, I evaluated the hydrogeologic and geochemical aspects of site characterization, reviewed monitoring plans and conducted environmental sampling. I supervised technical staff and interacted regularly with other state and federal agencies, the public and industry representatives. Prior to that position, I worked for three years as a Geologist and Water Resource Specialist and Supervisor in the Superfund Oversight Section of the GWQB. In that capacity, I was responsible for overseeing and conducting complex environmental and hydrologic investigations under CERCLA; prepared and reviewed environmental reports and reviewed technical reports regarding restoration of Superfund sites; and conducted extensive field sampling. I also worked

six years as a project manager and soil scientist for an environmental consulting firm. In that capacity, I was responsible for project management and performance of environmental investigations and remediation of soil, surface water, and ground water contamination and for erosion and dust control studies.

I have a Bachelor of Science degree in Soil Science from California Polytechnic State University, and was a Master's candidate in Soil Science at the University of California at Davis.

A copy of my resume is NMED Exhibit 12.

II. Summary of Testimony

The purpose of my testimony is to provide a history of the operational permits issued to Tyrone by the Department, and to explain the interrelationship between the Tyrone operational permits and the Closure Permit. In my testimony, I will describe the approximately 30 year history of permitting the Tyrone Mine under the Water Quality Act, and explain how that history shows that the Department has treated the ground water beneath the site as protected under the WQA and Commission Regulations. The operational permits all require pollution prevention measures and abatement of contaminated ground water, and there are many conditions in the permits to ensure that ground water quality is protected underneath the entire Tyrone Mine site. As well, the operational permits contain and have contained closure requirements specific to the facilities covered by the permit. The closure requirements are and have been intended to ensure that ground water quality underneath the entire Tyrone Mine site is protected. Thus, the general course of conduct of the Department for almost 30 years shows that the parties have treated the ground water underneath the entire Tyrone Mine site, including ground water underneath leach stockpiles, as protected under the WQA and Commission Regulations.

In my testimony, I will describe the potential effect on the Tyrone operational permits if

the ground water underneath the mine site is found not to be protected: in that case, the ground water in and around the site will become more heavily contaminated than it already is. I will also describe the potential effect on ground water in the State: in that case, ground water that currently meets water quality standards is likely to become contaminated and existing contamination would not be cleaned up.

III. Discharge Permits at the Tyrone Mine

A. Relationship Between the Tyrone Operational Permits and the Closure Permit

Two types of discharge permits are in place for the Tyrone Mine Facility: operational permits and the Closure Permit. Both types of discharge permits are issued pursuant to the WQA and Commission Regulations. The WQA and Commission Regulations do not distinguish between operational permits and closure permits, and generally a facility's operating requirements and closure plan are contained within one facility discharge permit. Tyrone, however, is a more complex site than most and, therefore, it currently has nine operational permits to address the different facilities on site. The Tyrone operational permits primarily address the operational phase of individual facilities at the Tyrone Mine, and include requirements for pollution prevention measures during operations, ground water monitoring, contingency plans, abatement of ground water contamination, and corrective action in the event of unauthorized discharges. The operational permits also include specific closure measures that are not included in the more general Closure Permit.

In accordance with Section 20.6.2.3107.A(11) NMAC, each of Tyrone's operational permits must include the required elements for a discharge plan, including a closure plan "to prevent the exceedance of standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation" The Tyrone Closure Permit

broadly addresses closure requirements for the Tyrone Mine that will apply on a site-wide basis, including but not limited to requirements for regrading and covering of tailings and stockpiles, general closure of open pits and surface impoundments, closure of buildings and pipelines, site-wide abatement of ground water contamination and long-term water treatment, post-closure monitoring, financial assurance, and studies that need to be conducted to address certain closure requirements.

Because the Tyrone Closure Permit contains the general provisions for the closure plan for the mine site that apply to each of the facilities under the operational permits, DP-1341 is closely related to and dependent on the conditions and requirements of each of the operational permits. DP-1341 is called a "Supplemental Discharge Permit" because it supplements the requirements of all of the existing operational permits. Thus, any decisions affecting DP-1341 have the potential to significantly affect the existing terms and conditions of the operational permits, many of which have now been in place for decades. The requirements of the operational discharge permits cannot be separated from the requirements of the Closure Permit, and this should be considered in the context of what ground water is protected at the Tyrone Mine.

As I stated, for most dischargers the closure plan and the conditions relating to operations are included in the same discharge permit. This generally makes it easier to tie appropriate closure measures to the individual operational discharges covered in the permit. The permit conditions relating to operations require ground water protection measures to address the permitted discharges at the facility, and the closure plan ensures that closure measures protect ground water from those same discharges after cessation of operations. Where pollution prevention and source control measures are required for a facility during site operations, a

different standard for water quality protection should not apply for the closure plan.

For the Tyrone Mine, the Department determined that it was preferable to have a separate Closure Permit based on several factors. First, the technical aspects of determining how best to close and achieve source control for copper leach stockpiles and tailing impoundments with widespread ground water contamination are very challenging. It would have been inefficient and unwieldy for the Department to revisit closure issues at renewal of each of nine operational permits. Discharge permits must be renewed at least every five years. NMSA 1978, § 74-6-5(I).

Second, there is widespread ground water contamination throughout the Tyrone Mine site, and contamination from the various individually permitted stockpiles has commingled to a large extent. Therefore it made sense to issue a site-wide closure plan to require comprehensive source control measures to prevent further contamination after closure.

Third, following passage of the Mining Act in 1993, Tyrone was required to obtain a site-wide closeout plan for the Tyrone Mine from the Mining and Minerals Division of the Energy, Minerals and Natural Resources Department. In order to coordinate the requirements of the operational discharge permit closure plans with the Mining Act closeout plan, and to review and approve these plans more efficiently, it made sense to have one discharge permit for the entire site that dealt exclusively with closure measures.

B. Summary of Operational Permits and Their Pollution Prevention and Abatement Requirements

1. Introduction

The nine operational discharge permits for Tyrone are designated DP-166, DP-286, DP-363, DP-383, DP-396, DP-435, DP-455, DP-670, and DP-896. The boundaries of the areas covered under each these discharge permits are shown on a map of the Tyrone Mine labeled NMED Exhibit 13. A tenth operational discharge permit for the Tyrone tailing impoundments,

DP-27, was not renewed after 2003. Operational issues for the tailing impoundments are being addressed under a Settlement Agreement and Stipulated Final Order dated October 2003 (Tailings Settlement Agreement). The area covered under the Tailings Settlement Agreement is shown on NMED Exhibit 13. The operational discharge permits and the Tailings Settlement Agreement cover virtually the entire Tyrone Mine site and the area covered by the Closure Permit.

It is important to understand that the purpose of each of the operational permits is to prevent contamination of ground water underneath and around the areas of the mine that are permitted and to require abatement of ground water contamination if it has occurred. Therefore, each of the operational permits contains conditions and requirements specific to the facilities covered by the permit necessary to prevent ground water contamination and to abate any contamination which has occurred.

The first discharge permit was issued to Tyrone in 1978 and the last one was issued to Tyrone in May of this year. Therefore, beginning almost 30 years ago and continuing to the present, the Department (or its predecessor)¹ has regulated the Tyrone Mine site under the WQA and Commission Regulations so as to protect all ground water underneath and around the entire mine site.

The following is a list of the Tyrone Mine operational permits and selected pollution prevention and abatement conditions that are in place and required by those permits.

2. Former DP-27/Currently Tailings Settlement Agreement for Tyrone Tailing Impoundments; First Issued November 9, 1978

Pollution prevention and abatement conditions in place: 1. Operational discharges of

¹ The Department's predecessor was the Environmental Improvement Division within the Health and Environment Department. For purposes of my testimony, I will simply refer to the "Department" when the reference is either to the Department, as currently authorized, or the Environmental Improvement Division.

process water, waste water, and municipal sludge to tailing impoundments must be eliminated to prevent these discharges from migrating through the unlined impoundments and further contaminating ground water; 2. Existing contaminated water which is impounded on the tailings must be removed to prevent infiltration into ground water; and 3. Closure of the tailing impoundments was required, including regrading and cover to prevent future ponding of water and provide source control to prevent further ground water contamination.

3. DP-166 for No. 2 Leach System, Main Pit, Valencia Pit, San Salvador Hill Pit, Copper Mountain Pit, and SX/EW Plant; First Issued July 20, 1981

Pollution prevention and abatement conditions in place: 1. Synthetically-lined ponds are required for collection of pregnant leach solution (PLS); 2. Above ground raffinate storage tanks must be utilized to avoid leakage that could impact underlying ground water; 3. A waste rock handling plan is required to ensure waste rock is placed in a manner that limits acid rock drainage beneath stockpiles; 4. Tyrone may not expand stockpile areas and volumes beyond permit limits in order to limit the footprint over which acid rock drainage may occur; and 5. Ground water contamination beneath the leach system and the mine must be abated to ground water quality standards or pre-operational water quality.

4. DP-286 for No. 3 Leach System; First Issued January 24, 1985

Pollution prevention and abatement conditions in place: 1. Synthetically lined PLS collection ponds are required that include a leak detection system; and 2. Ground water contamination from the No. 3 Leach System must be abated to ground water quality standards.

5. DP-363 for No. 1A Leach System; First Issued February 11, 1985

Pollution prevention and abatement conditions in place: 1. An above-ground tank is required for PLS collection; 2. PLS must be collected in a synthetically-lined pond; 3. Storm

water must be collected in a clay-lined collection pond; 4. Tyrone may not expand stockpile areas and volumes beyond permitted areas; and 5. An abatement plan is required to clean up existing ground water contamination to ground water quality standards within the area of the leach system.

6. DP-383 for No. 1B Leach System; First Issued December 17, 1985

Pollution prevention and abatement conditions in place: 1. PLS must be collected in a synthetically-lined pond or an above ground tank; 2. Tyrone may not expand stockpile areas and volumes beyond permitted areas; and 3. An abatement plan is required to clean up existing ground water contamination to ground water quality standards within the area of the leach system.

7. DP-396 for No. 1C, 7A, and South Rim Pit Waste Rock Piles; First Issued July 21, 2000

Pollution prevention and abatement conditions in place: 1. Active leaching of piles through addition of raffinate or placement of additional waste rock is not permitted; 2. Seepage water must be collected in synthetically-lined ponds; and 3. Abatement of existing ground water contamination to ground water quality standards is required within the area of the waste rock piles.

8. DP-435 for No. 2A and 2B Leach Systems and 2B and 9A Waste Rock Piles; First Issued November 3, 1986

Pollution prevention and abatement conditions in place : 1. Above-ground collection tanks must be utilized for PLS collection; 2. Synthetically-lined ponds must be utilized for PLS collection and for a mine dewatering surge pond; 3. Tyrone may not expand permitted stockpile areas and volumes; 4. A waste rock handling plan is required to prevent acid rock drainage that could contaminate ground water; and 5. Abatement of existing ground water contamination to

ground water quality standards is required within the leach system and waste rock pile areas.

9. DP-455 for Gettysburg Leach System, Gettysburg Pit, and 7B Leach System; First Issued January 15, 1988

Pollution prevention and abatement conditions in place: 1. Synthetically-lined ponds must be utilized for PLS collection; 2. Fluid levels must be limited in Gettysburg Pit; 3. Tyrone may not expand permitted stockpile areas and volumes; and 4. Abatement of existing ground water contamination to ground water quality standards is required within the Leach System and Pit areas.

10. DP-670 for Savannah Pit and East Main Leach System; First Issued July 13, 1990

Pollution prevention and abatement conditions in place: 1. Tyrone may not expand permitted stockpile areas and volumes; 2. A lined sump must be utilized for PLS collection; 3. Discharges of leach solutions, leach ore, or waste rock to the Savannah Pit are not permitted; 4. Tyrone may not mine below the water table in the Savannah Pit without modifying the discharge permit to ensure protection of water quality; and 5. Abatement of ground water contamination from the East Main Leach System and Savannah Pit is required.

11. DP-896 for No. 1 Leach Stockpile and Acid Unloading Facility; First Issued May 18, 2007

Pollution prevention and abatement conditions in Place: 1. Active leaching of the stockpile through addition of raffinate is not permitted; 2. A concrete sump must be utilized for collection of wash down water and stormwater; 3. Tyrone may not expand permitted stockpile areas and volumes; and 4. Abatement of existing ground water contamination to ground water quality is required within the Leach Stockpile and Acid Unloading Facility areas.

12. Summary

As demonstrated through this listing of permits and some of their conditions, each

operational discharge permit contains requirements to protect ground water beneath all permitted facilities and areas of the Tyrone Mine. These requirements include measures such as lining of collection ponds and implementation of waste rock handling plans to prevent acid rock drainage (ARD) that could contaminate ground water. The operational discharge permits also contain extensive requirements to implement corrective actions, such as seepage interceptor systems, where pollution prevention measures have failed, and to abate contaminated ground water.

Throughout the 30-year history of permitting the Tyrone Mine site, to the best of my knowledge Tyrone has never appealed any of the operational permits or the requirements within them to prevent ground water contamination or to abate ground water contamination beneath and around the mine site.

C. Closure Plans for Tyrone

Although DP-1341 was not issued until 2003, it is important to note that closure plans or requirements for closure plans were in place in the Tyrone operational discharge permits as early as 1986. These requirements established the Department's requirements for ground water protection after closure of individual facilities. For example, the requirement previously identified for DP-166 -- to return ground water quality beneath the No. 2 Leach Stockpile and the mine to ground water quality standards or pre-operational conditions after cessation of operations -- was incorporated into DP-166 as the part of the permit's closure plan in the permit renewal dated July 20, 1986. AR, DP-166, A-76. As the potential long-term effects of ARD associated with stockpiles at the Tyrone Mine became more evident, the Department began requiring closure plans for all of the operational permits that included source control measures such as regrading and covering to protect ground water beneath permitted facilities. The current requirements of DP-1341 are therefore a continuation of permitting actions previously conducted

under each of the operational permits for over a 20-year period.

D. Examples of the Department's History of Protection of Ground Water at the Mine Site

1. Introduction

For each new discharge permit application from Tyrone, the Department has required an analysis of the site geology and hydrology and the collection of ground water analytical data in order to determine the most appropriate requirements to protect ground water beneath individual facilities within the mine site. Although DP-1341 broadly addresses the entire mine for general closure purposes, each area of the mine has been previously scrutinized under the operational permits to ensure that ground water is protected. Below are examples of where the Department, over the course of permitting the Tyrone mine, has indicated that the ground water beneath the mine site is protected under the WQA and of where Tyrone has represented that it would not contaminate ground water beneath the mine site. These examples do not represent all the instances in which this conduct has occurred, but are simply intended to be illustrative of the general course of conduct over the years.

2. No. 2 Leach Stockpile

An example is DP-166, which permits the operations at the No. 2 Leach Stockpile. DP-166 was the first discharge permit for a leach stockpile, approved on July 20, 1981. The permit required numerous ground water monitoring wells inside the perimeter of the leach stockpile area. These monitoring wells were installed to establish pre-operational ground water quality beneath the proposed leaching operation and to monitor ground water quality following initiation of active leaching to determine whether the leaching operation was causing any ground water contamination. Selected locations of these wells are shown on an enlarged map of the Tyrone Mine labeled NMED Exhibit 14. Even though most of these wells within the perimeter of the

stockpile were eventually mined out or removed due to expansion of mine operations, the Department's requirement for installation of the wells shows that the Department was concerned with the ground water quality inside the perimeter of the leach stockpile area.

Tyrone initiated the discharge of raffinate and therefore active leaching of the stockpile in 1984. In a July 25, 1985 letter, the Department notified Tyrone that there was a "serious" ground water contamination problem at the leach stockpile based on water quality data from Monitoring Wells 6-3, 6-4, and 6-5 located in between the leach stockpile and the Main Pit. The Department required that Tyrone, "Propose specific strategies for the mitigation of the ground water contamination problem at the No. 2 leach dump site." AR, DP-166, A-48² (emphasis in original). The Department further stated that, "Any renewal application must demonstrate abatement of the existing ground water contamination and the prevention of future contamination." *Id.*

In 1985, there was considerably less information available than today regarding the long-term impacts of ARD at copper mine operations and the measures necessary to provide adequate source control and cleanup of ground water contaminated as a result of ARD. It is now well understood that, without source control, ARD can continue to be generated without active leaching by mine operators, and that precipitation alone can continue to leach contaminants from stockpiles for indefinite periods of time, even for centuries.

However, based on existing knowledge at the time, consultants for Tyrone in a report dated May 27, 1986 prepared an analysis suggesting that the ground water quality beneath the No. 2 Leach Stockpile could be returned to pre-operational conditions within a relatively short time frame. The analysis presumed that seepage from the leach stockpile would "decrease over time and eventually cease" following cessation of active leaching. AR, DP-166, A-66. The

² "AR" refers to the Administrative Record in this matter.

report further indicated that the period of time following cessation of active leaching for ground water quality to “approach or reach the preleaching water quality . . . is estimated to be 4 to 30 years.” AR, DP-166, A-66. In a June 13, 1986 letter, the Department informed Tyrone that it must commit to returning the ground water quality to pre-operational water quality “at the wells between the No. 2 leach dump and the mine and at the wells within the No. 2 leach dump . . .” AR, DP-166, A-73 (emphasis in original). Tyrone agreed to this requirement in a June 23, 1986 letter to the Department. *See* AR, DP-166, A-74. The wells that Tyrone was required to monitor to determine if pre-operational ground water quality was achieved were Wells 2-2, 2-3, 2-5, 4-1, 6-3, 6-4, and 6-5, which are located within the boundaries of the leach stockpile area and are shown on NMED Exhibit 14.

Even though Tyrone’s 1986 analysis is now understood to have been faulty regarding timeframes and methodology to abate ground water contamination beneath the leach stockpiles, the important point is that the requirement to return ground water to established pre-operational water quality standards beneath the stockpile and the mine itself has been a requirement of DP-166 and of all subsequent renewals of DP-166, including the most recent renewal dated May 27, 2005. This permit requirement demonstrates that with issuance of the first discharge permit for a leach stockpile in 1981 at the Tyrone Mine, the Department required ground water to be protected and abated to water quality standards, or to pre-operational water quality, beneath permitted facilities including the leach stockpiles.

3. No. 1A Leach Stockpile

At the No. 2 Leach Stockpile and other stockpiles, the Department did not anticipate the severity of ground water contamination that would result from Tyrone’s operation of the leach stockpiles, for which the Department issued operational discharge permits. In many cases,

Tyrone represented, prior to permit issuance, that degradation of ground water would be minimal or non-existent. This occurred with the No. 1A Leach Stockpile for which Tyrone represented that there was little or no ground water that would be affected by the leaching operations. See AR, DP-363, A-14; AR, DP-363, A-16; AR, DP-363, A-19; AR, DP-363, A-22; AR, DP-363, A-24; AR, DP-363, A-26.

Despite Tyrone's representation, the Department issued a discharge permit for the stockpile in 1985 to protect ground water at that site.³

4. No. 3 Leach Stockpile

On May 25, 1983, Tyrone submitted a proposed discharge plan application for the No. 3 Leach Stockpile. A report by Woodward-Clyde Consultants attached to the proposal stated that, "In summary, potential impacts of ground-water discharges from the Phelps Dodge No. 3 Copper Leach system appear to be minimal." AR, DP-286, A-1. In further correspondence to NMED regarding the discharge plan application, Tyrone stated that because compacted clay was being placed in drainages at the base of the stockpile, "we have confidence in this design's ability to achieve the seepage rate and quantity described in the discharge plan which would not cause any ground water problems." AR, DP-286, A-12. Tyrone stated further that, "With a leachate flow of 10 gpm, the mixed water [ground water and leachate] could show an increase in contaminants, of approximately 1 to 2 percent and pH may be slightly affected. If complete mixing is accomplished the contaminant increases would not be detectable." AR, DP-286, A-17. Tyrone also represented that, "The Tyrone leach dumps 1, 1A, and 3 are located upon the alkaline Gila Conglomerate; and the above-described reaction [iron salt precipitation] should occur to act to

³ By 1996, a plume of contaminated ground water containing PLS was discovered by the Department to be moving from under the No. 1A Leach Stockpile and the No. 1C Waste Rock Pile in the subsurface of Oak Grove Draw, and from under the No. 1 and No. 1B Leach Stockpiles in the subsurface of Brick Kiln Gulch. The plumes extended approximately 3.5 miles to the east of the Tyrone Mine site.

seal their bases to prevent both the loss of copper-bearing solution and any possible effect on the quality of ground water.” AR, DP-286, A-18.

Although Tyrone represented that ground water would not be affected by its leaching operations, less than six months after Tyrone began leaching the No. 3 Leach Stockpile in early 1990, ground water from monitoring well P-12 exceeded ground water quality standards, and an investigation was begun. The investigation revealed contamination in the regional aquifer. By 2002, 405 monitoring and extraction wells had been installed to monitor and control the contamination, actions intended to protect the ground water in the area and prevent further contamination.

5. Summary

Over the many years that Tyrone has applied for and received discharge permits from the Department for its mining operation, Tyrone repeatedly represented that ground water quality underneath the mine site would not be impaired by the discharges for which it sought permits to operate. The fact that the ground water underneath the mine site is now heavily contaminated should not be a reason to allow that contamination to continue to exist, and to “write off” large areas of ground water, when that ground water was previously considered protected under the WQA when the discharge permits were issued.

The general course of conduct for nearly 30 years shows that the Department considered the ground water underneath and around the entire Tyrone Mine site subject to protection under the WQA and Commission Regulations; that the Department required all Tyrone operational discharge permits to include pollution prevention measures and abatement requirements to protect the ground water beneath and around the site; that the Department consistently required Tyrone to clean up ground water to ground water quality standards or to pre-operational water

quality standards; that Tyrone represented repeatedly that its discharges from the mine would not contaminate ground water; that Tyrone has put into place the pollution prevention measures required by its discharge permits; and that Tyrone did not appeal the pollution prevention measures or abatement requirements under the operational permits. As such, the general course of conduct for 30 years shows, in my view, that the Department acted as though the ground water beneath and around the Tyrone Mine site was subject to protection under the WQA and WQCC Regulations.

IV. Potential Effect on the Tyrone Operational Permits and Ground Water Quality in the State If Ground Water Beneath the Tyrone Mine Is Not Protected

If the Commission were to decide that any portion of the area beneath the Tyrone Mine is not a place of withdrawal of water for present or reasonably foreseeable future use, there would be significant ramifications for the operational discharge permits already in place. Pollution prevention measures currently in place could then be deemed unnecessary for some of the current discharges at the Tyrone Mine, and the operational permits for those discharges, potentially, would no longer be necessary. Even if the operational permits remained in place, many of the conditions of the permits might no longer be enforceable, including many of the substantial pollution prevention measures described above, such as prohibiting the expansion of leaching activities at certain stockpiles and requiring liners in surface impoundments.

Additionally, while all of the operational discharge permits presently require abatement of contamination that has occurred beneath permitted facilities, it is unclear whether the Department could enforce these provisions if it were determined the ground water is not protected. Without source control and many of the existing pollution prevention measures, ground water quality beneath the mine site would likely become considerably worse than it is now. Moreover, containment strategies -- such as pit dewatering and seepage interceptor


systems – if used alone would become increasingly difficult to manage and significantly more contaminated water would need to be treated.

Finally, the Department is concerned that the existing regulatory practices employed pursuant to the Water Quality Act at the Tyrone Mine may be significantly disrupted. These existing regulatory practices that protect ground water throughout the mine area have been in effect for almost 30 years under the operational permits.

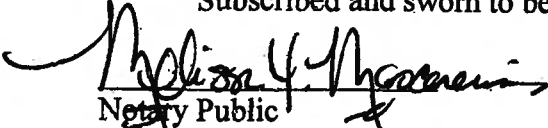
If ground water beneath any portion of the Tyrone Mine is determined not to be protected, there will be numerous dischargers from mine sites around the State that will seek to extend the same analysis to their facilities as well. The Ground Water Quality Bureau currently oversees approximately 50 discharge permits for mine sites, and approved closure plans for these mine sites consistently include implementation of source control measures to protect ground water beneath these sites, including regrading and covering of stockpiles. Any change in the Department's practices of protecting ground water at the Tyrone Mine has the potential of destabilizing many existing ground water protection activities currently in place throughout New Mexico and could result in ground water contamination in New Mexico that does not presently exist.

This concludes my direct testimony.

I, Mary Ann Menetrey, swear that the foregoing is true and correct.


Mary Ann Menetrey

Subscribed and sworn to before me this 9th day of July, 2007 by Mary Ann Menetrey.


Notary Public

My commission expires:

April 3, 2011