

## SUMMARY AND RESPONSE TO PUBLIC COMMENTS

Permit No: Aquifer Protection Permit (APP) Application # 106100  
Facility Name: Rosemont Copper Project

Applicant: Rosemont Copper Company (Rosemont)

Permit Action: Final permit decision and response to comments received on the draft permit during the following public comment period: 12/20/11-2/3/12

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### A. INTRODUCTION

#### Summary

The Rosemont Copper Project is a proposed new copper production facility that has been designed to meet prescriptive Best Available Demonstrated Control Technology (BADCT) where standards have been established. The project consists of an open-pit copper mine and associated heap leach copper recovery facilities, and is located in the Santa Rita Mountains approximately 30 miles southeast of Tucson, Arizona. The property consists of a group of patented and unpatented mining claims that cover most of the Rosemont and Helvetia Mining Districts.

All of the application components for the Rosemont Copper Project Aquifer Protection Permit have been evaluated for, and subject to, conformance with the requirements of Arizona Revised Statutes (A.R.S.) §49-241 through §49-244, and Arizona Administrative Code (A.A.C.) R18-9-A201 through A209.

**Public Notice, Public Meetings and Public Hearing Comments**

The public comment period began on December 20, 2011 and ended February 3, 2012. Publication of the preliminary decision to issue a permit and the associated public hearing were published in the Arizona Daily Star on December 20, 2011. A public hearing was held at Palo Verde Magnet High School in Tucson, AZ, on January 5, 2012. This summary of public comments received and associated ADEQ responses is prepared in accordance with the Arizona Administrative Code (A.A.C.) R18-9-109.

Comments received during the public comment period are summarized below. The comments are followed by ADEQ's response shown in *italics*. Comments are organized as follows:

<b>Comment #</b>	<b>Source</b>	<b>Method</b>
1-3	John Windes, Arizona Game and Fish Dept.	Written
4-10	Martie Maierhauser, Cienega Watershed Partnership	Written
11-18	Group #1- Concerned Citizens	Written & Oral
19	Group #2- Concerned Citizens	Written & Oral
20-36	Steve Pawlowski, Grand Canyon Chapter of the Sierra Club	Written
37-39	Dick Dempsey, Chair-Green Valley Council, Environmental Committee	Written
40-41	Patrick Homer, Sonoita, Arizona	Written
42	Richard Basye, Pima Association of Taxpayers	Written
43-45	Zay Hartigan, Concerned Citizen	Written
46-48	Dick Nelson, Concerned Citizen	Written
49	Emma Williams, Concerned Citizen	Written
50-53	Stanley Hart, Concerned Citizen	Written
54-85	David Steele, Save the Scenic Santa Ritas	Written
86-154	C.H. Huckelberry, Pima County Administrator's Office	Written
155-173	Marshall Magruder, Concerned Citizen	Written
174-201	Katherine Arnold, Rosemont Copper Company	Written
202	Pete Inks, Concerned Citizen	Oral
203	Dona LaSchiava, Concerned Citizen	Oral
204	Steve McCoy, Concerned Citizen	Oral
205	Elsie Wattson Lamb, Concerned Citizen	Oral
206	John Cesar, Concerned Citizen	Oral
207	Elizabeth Webb, Concerned Citizen	Oral
208-210	Stephen Brittle, Don't Waste Arizona	Oral
211	Jeanne Broome, Concerned Citizen	Oral
212-213	Marshall Magruder, Concerned Citizen	Oral
214	Peter Hughes, Concerned Citizen	Oral

215	Sandy Whitehouse, Concerned Citizen	Oral
216-218	Randy Serraglio, Concerned Citizen	Oral
219	Duane Durham, Concerned Citizen	Oral
220	Ginny Durham, Concerned Citizen	Oral
221	Dick Nelson, Concerned Citizen	Oral
222-224	John Kozma, Concerned Citizen	Oral
225	Robert Harris, Concerned Citizen	Oral
226-229	Nancy Freeman, Groundwater Awareness League	Oral
230-232	Roger Featherstone, Arizona Mining Reform Coalition	Oral
233-234	Gayle Hartman, Save the Scenic Santa Ritas	Oral
235-236	Carol Shinsky, Concerned Citizen	Oral
237-238	Morris Farr, Concerned Citizen	Oral
239	Mary Garcia, Tohono O'Odham Nation	Oral
240	Diane Raw, Concerned Citizen	Oral
241	Dick Basye, Concerned Citizen	Oral

ADEQ received numerous comments related to the proposed Rosemont project regarding water supply, public and domestic wells, groundwater withdrawal permitting, and water rights. The regulatory authority for these matters is the Arizona Department of Water Resources. Please contact Scott Miller at (602) 771-8604 for further information regarding these matters.

ADEQ is aware that there are several other pending regulatory decisions regarding this proposed mining operation. Any modifications to the mine operations as currently proposed in this APP due to decisions of other agencies may require amendments to the APP.

Many comments were received in direct response to the U.S. Forest Service Draft Environmental Impact Statement and the U.S. Army Corps of Engineers Section 404 permits. ADEQ does not have authority over these permitting processes and has deferred response to these comments to the proper regulatory agency.

Many comments have been shortened or paraphrased for presentation in this document; a copy of the unabridged comments is available upon written request from the ADEQ Records Center, [recordscenter@azdeq.gov](mailto:recordscenter@azdeq.gov).

## **B. WRITTEN COMMENTS**

*Written comments received on the official record were received during the Public Comment period.*

**John Windes, Arizona Game and Fish Department-**  
**Comment 1:**

In reference to a statement in the Rosemont draft Environmental Impact Statement (EIS), the commenter states the draft APP should require protective covers to prevent migratory birds from being attracted to the process solution impoundments and consequently suffering injury or death from exposure to process solution.

*ADEQ does not have authority to require covers on process solution impoundments through the APP Program to protect migratory birds. The provisions of Arizona Revised Statutes (A.R.S.) §49-241 through §49-244, and Arizona Administrative Code (A.A.C.) R18-9-A201 through A209 are strictly related to protecting groundwater quality. The APP Program was established to provide protection of groundwater quality.*

**Comment 2:**

Echoing the sentiments of Comment 1, the commenter recommended that the APP be revised to set conditions for the management, treatment and disposal of leachate following cessation of heap leach activities adequate to protect wildlife resources.

*See response to comment 1. Heap leach drain-down is considered during implementation of an ADEQ approved closure plan for heap leach facilities.*

**Comment 3:**

The commenter expressed concern about the placement of Point of Compliance (POC) #3. Specifically its ability to provide adequate early warning of an Aquifer Quality Limit (AQL) exceedance from the Dry Stack Tailings Facility impacting the Barrel Canyon drainage, Davidson Canyon, and Cienega Creek Outstanding Arizona Waters.

*The APP Program provides for the protection of groundwater quality. Protection of surface water quality is provided through other state and federal programs. POC locations are required by A.R.S. §49-244 to be placed on the downgradient edge of the pollutant management area. POC #3 is located correctly, as required by the cited statute.*

**Martie Maierhauser, Cienega Watershed Partnership-**

**Comment 4:**

The commenter states the APP should specify "Zero discharge" at permit issuance.

*The APP regulated facilities at Rosemont have been evaluated for conformance with A.R.S. §49-241 through §49-244, and A.A.C. R18-9-A201 through A209. These facilities have been designed to ensure the greatest degree of discharge reduction achievable through application of Best Available Demonstrated Control Technology (BADCT). ADEQ is not aware of practicable BADCT that would allow for no discharge. Point of Compliance wells have been selected to monitor the effectiveness of the design. Any discharge contributing to an AQL exceedance will constitute a violation of this permit, subject to corrective action.*

Comment 5:

The commenter states that Alert Levels (ALs) should be set equal to ambient conditions prior to permit issuance.

*The applicant is given one year to install the POC wells. The POC wells are required to be installed prior to discharge (i.e. – use of the APP permitted facilities). "Use" of the waste rock and tailing facilities will begin with the first placement of material in the impoundments, including the construction of waste rock buttresses.*

*As a practical matter ambient water quality is not determined prior to permit issuance, as final locations of the POC wells are not officially established until the APP is issued.*

*The use of eight quarters of ambient data is preferred in order to provide two complete annual hydrologic cycles, representing the data from two complete years of groundwater monitoring, including wet and dry seasonal cycles. Two years of ambient data are considered to be more statistically robust in the event of an abnormal wet or dry period.*

*Initial operations at the site, conducted during the ambient monitoring period, are not expected to impact the aquifer at the POC locations prior to the completion of ambient groundwater monitoring and establishment of ALs, based on review of the modeled groundwater flow rates.*

*Based upon the anticipated duration of the pre-production activities, the distance from the nearest discharging facilities to the nearest POC wells, the depth to water, and the predicted groundwater flow rates, it is unlikely that potential discharges from the above facilities would reach the POC locations prior to the completion of the ambient monitoring period.*

Comment 6:

The commenter states that water quality will be adversely affected by lowering of the water table, and that ambient water conditions should be measured at the original water levels, and mitigations should take place for this lower quality at lowered levels.

*ADEQ does not have information with which to conclude that lowering of the water table will affect the quality of groundwater. POC wells have been selected to monitor the effectiveness of the mine design at minimizing discharges. Under the permit, Rosemont must investigate and take any necessary corrective actions for any discharge contributing to an AQL exceedance discovered through monitoring at POC well.*

Comment 7:

The commenter states that biennial monitoring is insufficient and that monitoring of all parameters should take place quarterly.

*Based upon predicted groundwater flow rates, biennial monitoring is adequate to provide timely detection of discharges arriving at the points of compliance were such discharges to occur. Numerous constituents are required to be monitored quarterly at the POCs.*

*The exceedance of the alert levels or aquifer quality limits for any of the constituents are evaluated under the contingency actions included in the permit, and allows for the monitoring program to be amended by the Department to increase frequency of monitoring or to add constituents for which sampling is required.*

Comment 8:

The commenter states that parameters monitored should include all byproducts and chemicals used in the mining process, and that hazardous materials and chemical processing components should be listed as potential byproducts in the permit so that ADEQ is informed of what limits to set and for which parameters. The commenter also states these limits should be set by a non-partisan party.

*The ALs and AQLs are established and independently approved by the ADEQ based upon the sampling performed under the direction of registered geologists or professional engineers licensed by the State of Arizona Board of Technical Registration. These registered professionals work under contract to Augusta Resources. The sampling results are analyzed and reported by Arizona Department of Health Services licensed labs. The monitoring list is based upon those constituents regulated by the APP Program based upon A.A.C. R18-11-401 et. seq., the Aquifer Water Quality Standards rules.*

*Spills of contaminants or hazardous materials are addressed by other programs within the ADEQ or EPA. See permit section 2.6.5. Chemical constituents used in processing at the mine are not regulated by the APP program unless they are discharges related to APP regulated facilities (i.e. – impoundments or stockpiles).*

Comment 9:

The commenter states that the APP should not be issued before the final EIS and 404 permit are in place. The commenter also states that if another alternative is selected, the APP permit should be amended and include a public hearing and comment period.

*ADEQ's review of this application is subject to the requirements of the licensing time frames ("LTF") statute under Arizona Revised Statutes (A.R.S.) §41-1072 through §41-1079 and the LTF rules under Arizona Administrative Code (A.A.C.) R18-1-501 through R18-1-525. The APP application process is independent of the U.S. Forest Service and Army Corps of Engineers permitting process. Any modifications to the mine operations that may be required due to decisions made by those agencies may require amendments to the APP for which a public hearing or public comment period may also be required.*

Comment 10:

The Commenter states that additional POCs should be required to monitor impacts to Outstanding Waters and shallow groundwater of Cienega Creek and Davidson Canyon.

*By statute, the point of compliance for the groundwater monitoring must be established in the uppermost aquifer. (i.e. – the shallowest groundwater). The points of compliance established under the APP will be adequate for the protection of groundwater at the edge of the pollutant management area. Environmental protection of surface water is the*

*jurisdiction of other federal and state programs. The APP Program does not specifically regulate discharges to surface water.*

**Group #1- Numerous Concerned Citizens-**

On February 1 & 2, 2012, numerous Arizona residents submitted a form letter posing eight comments to the draft APP. They have been grouped together for the purpose of this Responsiveness summary as Group #1.

**Comment 11:**

Commenters state that a closure plan should be submitted prior to permit issuance, instead of 90 days after notification, as stated in the permit.

*The Department has accepted a closure strategy and cost estimate, as allowed by statute at A.R.S. §49-243(N). The closure strategy was used to estimate closure costs based upon the number, size and type of facilities currently being permitted. As the facility will operate for several decades before closing and may potentially be modified, any detailed plans can only be made at the time the mine makes notification of closure.*

*The timing of the required notification is important, in that it allows for actual site conditions at the time of final closure to be adequately addressed. The language in Section 2.9 of the draft APP is consistent with the requirements of A.A.C. R18-9-A209(B).*

**Comment 12:**

Commenters questioned the adequacy of the closure/post-closure cost estimates and compared the perceived low dollar amount of the costs to the Bagdad Mine. It also stated that since Augusta Resources, the Canadian parent company, has never operated a mine before, the danger of bonds needed for cleanup is greater than for experienced mine operators.

*The closure/post closure cost estimates have been determined to be adequate in accordance with A.A.C. R18-9-A201(B)(5). Pursuant to A.A.C. R18-9-A203(C)(2), the applicant has satisfied the requirement for a financial assurance mechanism.*

*As stated in the draft APP and Factsheet, the financial requirement was satisfied through a surety bond for \$4.3 million. The cost estimates were prepared based on current market costs for typical activities associated with closure of discharging facilities of the size and number found at the Rosemont Mine. The cost estimates are available as part of the Rosemont APP application file for review.*

**Comment 13:**

Commenters stated that compliance schedule items (i.e. POC well installation) should be submitted prior to permit issuance.

*See response to comment 5.*

Comment 14:

Commenters stated that the APP would allow Rosemont to contaminate drinking water for two years before recommending discharge limits. It also stated that discharge limits for “reserved” should be set at zero.

*See response to comment 5.*

Comment 15:

Commenters stated that by not requiring a discharge limit, this APP is clearly inconsistent with Arizona law and should have not been proposed for public comment. The statute (A.R.S. §49-243(B) clearly states, that ADEQ CANNOT issue the permit unless the applicant “demonstrates” that there shall be no violation of aquifer water quality standards.

*See response to comment 5. A.R.S. §49-243(B) part 1 states “The facility shall be so designed, constructed and operated as to ensure the greatest degree of discharge reduction achievable through the application of BADCT...” The applicant has successfully demonstrated that the facility will meet the requirement to ensure the greatest degree of discharge reduction achievable. The applicant has proposed liners, storm water controls, operational practices including dry stack tailing technology, maintenance and facility monitoring that will greatly limit the pollutants potentially released from the facilities. The applicant has evaluated the potential migration of pollutants from the facilities and estimated a discharge impact area (extent of impact on the aquifer) based on hydro-geologic conditions at the site. Through this evaluation, the applicant has shown that the methods used to limit the impacts to the groundwater will be effective and there should not be a violation of aquifer water quality standards at the applicable point of compliance for the facility. Groundwater monitoring is also required to ensure these protective measures are effective.*

*A.R.S. §49-243 (B) part 2 states “That pollutants discharged will in no event cause or contribute to a violation of aquifer water quality standards at the applicable point of compliance for that facility.” A.R.S. §49-243 (B) part 3 states “That no pollutants discharged shall further degrade at the applicable point of compliance the quality of any aquifer that at the time of permit issuance violates the aquifer water quality standard for that pollutant.” The Aquifer Quality Limits will be included in the permit in order to implement this section of the statute. The APP rules require that the AQLs will be based on the quality of the groundwater at the time the permit is issued, therefore, ADEQ is requiring ambient monitoring be performed as a permit condition.*

Comment 16:

Commenters stated that the BADCT demonstration is useless without a clear statement of the discharge limits. It is impossible to know how discharges shall be controlled without knowing the quantity of pollutants discharged.

*The pollutants in wastes and process solutions are identified in the application materials and the permittee has adequately demonstrated that the best available demonstrated control technology (BADCT) is proposed for each facility to ensure the greatest degree of discharge reduction achievable. The BADCT demonstration for the facilities in the permit considered the characteristics of the materials (wastes/process solutions) to be contained by engineered liner systems, the operational practices effective for limiting discharges of pollutants such as dry stack tailings, the storm water controls needed to protect facilities, and other factors on a site specific basis to limit to the greatest extent practicable any discharge of pollutants. See also response to comment 5.*

**Comment 17:**

Commenters stated that Rosemont's financial capabilities need closer scrutiny. There is an investigation pending concerning an apparent lack of financial disclosure by Rosemont's parent company, Augusta Resource. Additionally, Rosemont or Augusta has never operated a mine nor derived any revenues from mineral productions. Consequently, representations about its financial wherewithal need to be thoroughly examined.

*See response to Comment 12.*

**Comment 18:**

Commenters stated that the APP does not address monitoring and treatment of the heap leach pads after they are covered as part of the closure process. The APP also does not address the water quality issues associated with the pit lake that will occur after pit dewatering ceases as indicated in the Coronado National Forest Draft Environmental Impact Statement. Another noteworthy omission is that the APP does not ensure that critical information about the permittee, the design and configuration of facilities, the results of monitoring and potential exceedances and impacts are made publicly available.

*Upon notification of mine closure, the permittee shall submit a site-specific closure plan for approval which satisfies the closure requirements listed in A.A.C. R-18-9-A209(B)(3). The closure design shall include methods to treat any material remaining at the site, and to control discharges of pollutants from facilities. All monitoring and exceedance reporting, as well as specific design documents referenced in Section 5 of the APP, are public record and are available through a public records request. An update of the groundwater model, and any monitoring to be continued at the pit lake or POC locations will be established as a part of the post-closure plan.*

**Group #2- Numerous Concerned Citizens-**

**Comment 19:**

Numerous residents commented at the public hearing, as well as submitted written comments for the record, that they supported the Rosemont Copper Project due to perceived beneficial effects on the economy of the region, state and nation.

*These comments are noted, however they do not relate to the APP.*

**Steve Pawlowski, Grand Canyon Chapter of the Sierra Club-**

**Comment 20:**

The Sierra Club objects to the issuance of the Rosemont APP because Rosemont Copper has not demonstrated compliance with BADCT.

*The design documents for the Rosemont Copper Project have been determined to meet the requirements of A.A.C. R18-9-A202(A)(5).*

**Comment 21:**

The Sierra Club states that the Rosemont Copper Mine will discharge pollutants that cause violations of AWQS.

*Because the facilities comply with BADCT requirement to ensure the greatest degree of discharge reduction achievable, ADEQ believes that there will not be AWQS exceedances at points of compliance.*

**Comment 22:**

The Sierra Club believes that the APP will not prevent discharge and migration of pollutants to the aquifer.

*The applicant is not required to demonstrate that there will be no discharge of pollutants to the aquifer. The regulatory requirement is that the applicant shall design, construct and operate to ensure the greatest degree of discharge reduction achievable through the application of BADCT and that pollutants discharged will not cause a violation of aquifer water quality standards at the applicable point of compliance for the facility.*

**Comment 23:**

The commenter states that there are no specific closure or post-closure requirements in the proposed permit other than the requirements to provide notice of closure and submit a closure plan.

*See response to comments 11 and 18.*

**Comment 24:**

The commenter states the permittee's demonstration of financial assurance is inadequate and post-closure costs are grossly underestimated.

*See response to comment 12.*

**Comment 25:**

The Sierra Club states that the APP is deficient because there is no hydrological analysis of the impact of the open pit on the regional aquifer. It also states that the pit should be considered a discharging facility under A.R.S. §49-243.

*A.R.S. §49-243(G) allows passive containment through open pits to be used for BADCT where the hydraulic control of the pit is used to capture pollutants. However, the applicant has not attempted to demonstrate hydraulic control of pollutants using the pit or use of the pit as a capture zone for this APP. The pit is not a discharging facility during operations (see response to Comment 89). For closure, the pit has been predicted to act as a passive containment mechanism. Evaluation of the passive containment and any monitoring of the pit lake will be established as a part of the post-closure plan.*

Comment 26:

The commenter states that there are no site-specific conditions listed in the proposed APP (Section 2.2.2).

*In this case, BADCT was demonstrated by the applicant for the APP facilities without the need to address site-specific conditions.*

Comment 27:

The commenter states that there are no discharge limitations in the proposed APP (Section 2.3).

*See response to comments 5 and 16.*

Comment 28:

The commenter states that Rosemont should be required to install all POC wells and complete eight quarters of ambient groundwater monitoring prior to commencing any pre-production construction activities.

*See response to comment 5.*

Comment 29:

The commenter questioned the adequacy of the number and location of the POC wells, and also stated the permit should require continuing hydrological studies of the impact of the mine on regional groundwater conditions.

*The number of POC wells is comparable to that required by the APP program for other large mines statewide. The location of the POC wells, at the edge of the pollutant management area, is as required by statute (A.R.S. §49-244). Also see response to Comment 121.*

*Continuing hydrological studies are not required to allow appropriate groundwater monitoring for compliance under the permit. These types of updates are typically only required if the permittee is using open pit passive containment as a part of the BADCT demonstration.*

Comment 30:

The commenter requests removal of the statement "Not applicable" for discharge monitoring in Section 2.5.1.

*Discharge limits are included in the permit and indicate the wastes, process solutions and pollutants that are allowed to be placed in the permitted facilities. Monitoring the quality of these wastes process solutions and pollutants is not required by Section 2.5.1 because they have already been characterized.*

Comment 31:

The commenter states that ambient groundwater monitoring for metals should be for total metals, not dissolved metals.

*The standard practice of the APP program is to evaluate compliance using dissolved metals for mining permits. ADEQ believes that dissolved metals is representative of the metals levels in the aquifer, and excludes metals that might be introduced to monitoring samples from well construction materials.*

Comment 32:

The commenter states that surface water monitoring requirements are applicable, and should be included in the APP because of potential impacts to downstream Outstanding Arizona Waters.

*Storm water discharges associated with mining activities in Arizona are regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) Multi Sector General Permit (MSGP).*

Comment 33:

The commenter states that the terms and conditions prescribing closure requirements in the proposed permit are inadequate.

*See response to comments 11 and 18.*

Comment 34:

The commenter expresses concern about statements in the draft EIS regarding long-term seepage from facilities contributing to future aquifer degradation.

*Eliminating potential discharges from facilities after cessation of mine operations shall be addressed in the site closure investigation and design. See response to comments 11 and 18.*

Comment 35:

The commenter questions the technical capability of Rosemont Copper Company and its parent company, Augusta Resources.

*The Department has reviewed the technical capabilities of Rosemont Copper Company. The technical capability demonstration requires that appropriate documents be sealed by an Arizona registered geologist or professional engineer. The technical capability*

*requirement is a part of an on-going demonstration of technical capability. The permittee is required to maintain technical capability throughout the life of the facility.*

Comment 36:

The commenter questioned the adequacy of the closure costs and financial capability listed in the draft documents.

*See response to Comment 12.*

**Dick Dempsey, Green Valley Council, Environmental Committee-**

Comment 37:

The commenter stated that maximum allowable levels should be established for groundwater monitoring constituents prior to permit issuance.

*See response to comment 5.*

Comment 38:

The commenter stated that the current pond liner design as proposed by Rosemont is considered inadequate unless a very high probability of no through leakage during the life of the mine (i.e., 99.999999%) can be demonstrated.

*The liner designs as currently proposed, and accepted, meet the requirements of A.R.S. §49-243 to ensure the greatest degree of discharge reduction achievable through application of BADCT.*

Comment 39:

The commenter questions the adequacy of closure/post-closure cost estimates.

*See response to comment 12.*

**Patrick Homer, Sonoita, AZ-**

Comment 40:

The commenter states that money be set aside in sufficient amounts to cover any and all clean-up and closing costs for the proposed mine. The amount of the bond must be determined before operation begins, and the money set aside up front, not after the fact.

*See response to comment 12.*

Comment 41:

The commenter questions the adequacy of the holding capacities for ponds at the mine. *The facilities are adequately sized to account for normal operating capacity plus the 100-year/24-hour storm event plus two feet of freeboard.*

**Richard Basye, Pima Association of Taxpayers-**

Comment 42:

The commenter stated that Rosemont should agree to legally limit the size of their operation and pit size in order to estimate total tailings and water use.

*Should Rosemont agree to legally limit the size of their operation, any deviation from the designs of discharging facilities approved for this permit would require Rosemont to apply for amendments to the APP in accordance with R18-9-A211.*

**Zay Hartigan, concerned citizen-**

**Comment 43:**

The commenter asked why the report was released over the holiday season.

*ADEQ's review of this application is subject to the requirements of the licensing time frames ("LTF") statute under A.R.S. §41-1072 through §41-1079 and the LTF rules under A.A.C. R18-1-501 through R18-1-525. ADEQ was aware that the public notice period for the draft permit would occur over the Christmas and New Year's holidays. For this reason ADEQ extended the comment period to 45 days, rather than the minimum required 30 days.*

**Comment 44:**

The commenter asks why there is not an established standard discharge limit (as required by state and federal law) in the preliminary permit.

*See response to comment 5, 15 and 16.*

**Comment 45:**

The commenter asks what ADEQ is doing to ensure the company has the financial resources to protect our valuable water supply.

*See response to comments 12.*

**Dick Nelson, Tucson, AZ-**

**Comment 46:**

The commenter states that Rosemont should be responsible for release of pollutants to the environment that occur from storm events exceeding the 100-year/24-hour storm event.

*Rosemont would be held responsible for releases to the environment from events exceeding the 100-year, 24-hour storm event, however, if this occurred the releases would not be considered violations of the permit.*

**Comment 47:**

The commenter states that ALs and AQLs should be established prior to permit issuance.

*See response to comment 5.*

**Comment 48:**

The commenter states that the APP should not be issued until Rosemont demonstrates their BADCT shall work.

*ADEQ has reviewed and approved all relevant technical information regarding BADCT supplied with the permit application. Rosemont has demonstrated that their design will meet all statutory and regulatory requirements. The APP establishes a number of monitoring requirements to assure that built discharge control systems will operate as designed.*

*Rosemont must implement BADCT which means that they must use already established (demonstrated) discharge control elements that have been utilized on an industry wide basis to limit discharge to aquifers.*

**Emma Williams, Tucson, AZ-**

**Comment 49:**

The commenter suggested that “pre-emptive” mitigation measures be put into place (i.e. ‘pump and treat system’, and continuous pit backfilling), as well as establishing ALs and AQLs prior to permit issuance.

*There are currently no authorities under A.R.S. §49-241 through §49-244, or A.A.C. R18-9-A201 through A209, to require construction of preemptive mitigation measures. See response to comment 5 regarding the ambient groundwater monitoring period.*

**Stanley Hart, Green Valley, AZ,-**

**Comment 50:**

The commenter states that the Tetra Tech groundwater models are flawed, and that realistic in-field experiments of substantial duration (1-2 years) will provide data satisfactory for meeting the demonstration that no AWQS violations would occur.

*The APP facilities at Rosemont have been evaluated and determined to meet the design requirements of A.R.S. §49-243, R-18-9-A202, and the Arizona Mining BADCT Guidance Manual. The Arizona Mining BADCT Manual relies predominantly upon static testing for evaluation of the leaching potential of waste rock and tailings materials. Kinetic testing was performed by the applicant, although not required by the BADCT Guidance Manual based upon favorable acid generation/acid neutralization evaluations (Acid-Base Accounting). Although longer term testing is more likely to accurately predict the results of life-of-mine leaching, the tests required are a balance between predictive perfection and practicality.*

**Comment 51:**

The commenter states there are flaws in the three leachability tests provided in the application, and that “higher quality analytical data must be provided before the APP can be considered further.”

*The leachability testing was performed by state-certified laboratories according to standard procedures. The leachability tests cited are included in the Arizona Mining*

*BADCT Guidance Manual, and were performed in accordance with the manual as evidence relating to leachability of the waste rock and tailings materials. Although longer term testing is more likely to accurately predict the results of life-of-mine leaching, the tests required are a balance between predictive perfection and practicality.*

*Please note that the BADCT Guidance Manual (Appendix B.1.1) provides the applicant the option of physical/chemical characteristic testing at the time of mine closure.*

Comment 52:

The commenter states that there are numerous issues with Rosemont's demonstration that facilities will not violate Aquifer Water Quality standards.

*The Department has reviewed Rosemont's application and has found that it meets all regulatory requirements for issuance of a permit.*

*The protection of aquifer water quality at the points of compliance is established based upon the applicant satisfaction of BADCT, with confirmatory compliance monitoring at the points of compliance. If the BADCT is not performing as anticipated, and contaminants arrive at the points of compliance, the permit requirements for an evaluation of causes and corrective action in response. The Aquifer Quality Limits (AQLs) in the permit are generally set at the Aquifer Quality Water Standards (AWQS), with permit contingency actions being triggered upon an exceedance of 80% of the AQL in a point of compliance well.*

Comment 53:

The commenter states that in his opinion, the only way this mine operation may be permissible in the future is with a full and well-engineered geo-membrane liner system under the waste rock and tailings piles, with capture of 100% of all waters contacting the waste rock and tailings piles (as is commonly done in modern precious metal open pit mining).

*The APP facilities at Rosemont have been evaluated and determined to meet the design requirements of A.R.S. §49-243, A.A.C. R-18-9-A202, and the Arizona Mining BADCT Guidance Manual. Liners have been designed in accordance with these requirements and Departmental guidance.*

*The permit requires various types of liner systems for the following facilities: Primary Settling Basin, Process Water Temporary Storage Pond, Raffinate Pond, Heap Leach Pad, PLS Pond and Storm water Pond.*

**David Steele, Save the Scenic Santa Ritas-**

Comment 54:

The commenter states the APP should not be issued until Rosemont demonstrates that there will not be an exceedance of an AWQS.

*See response to comment 5.*

Comment 55:

The commenter states that the Permittee is able to contaminate our drinking water for at least 2 years before the Permittee is required to recommend a discharge limit.

*See response to comment 5.*

Comment 56:

The commenter states that the APP uses ambiguous language in defining compliance requirements.

*See response to comment 5.*

Comment 57:

The commenter states that critical regulatory plans are not required to be submitted, considered and approved until after the permit is issued.

*See response to comment 11.*

Comment 58:

The commenter states that there are significant and notable omissions from the APP.

*See response to comment 18.*

Comment 59:

The commenter suggests that BADCT is not adequate to prevent potential impacts to groundwater.

*See response to comment 15 and 53. The APP facilities at Rosemont have been evaluated and determined to meet the design requirements of A.R.S. §49-243, R-18-9-A202, and the Arizona Mining BADCT Guidance Manual.*

Comment 60:

The commenter asks about the Annual Registration Fee- "Nowhere in the permit is this dollar amount specifically noted or presented to the public for comment."

*Annual Registration fees are established in A.A.C. R18-14-104, and are not a subject of the permit.*

Comment 61:

The commenter states that the APP lacks clarity regarding the statement concerning the design flow. The DEQ and the APP need to specify the design flow rates for each of the major facilities comprising 10% or more of this stated 10,000,000 plus number. This is warranted to provide a more appropriate perspective on the components and magnitude of this project.

*The sizes and capacities of each APP facility are presented in Table 4.1.1 of the permit.*

Comment 62:

The commenter states that the APP does not specify the dollar amount for annual registration fee of the Non-Municipal Solid Waste Landfill for public review and comment.

*The annual registration fee for the Non-Municipal Solid Waste Landfill is established by A.R.S. §49-747(C).*

Comment 63:

The commenter states that the APP does not disclose the information on which the determination was made that the permittee had demonstrated financial capacity. It is essential that this information be provided for public review and comment prior to issuance of the APP. Additionally, this particular permittee warrants addition scrutiny with respect to its financial capacity to meet the conditions and terms of the APP.

*See response to comment 12.*

Comment 64:

The commenter states that the basis for these [closure] costs is not provided in the APP for public review and comments. Consequently, the APP is not complete and the APP must not be issued until this information is provided.

*See response to comment 18.*

Comment 65:

The commenter states that DEQ should independently investigate the feasibility of this [dry stack tailings] mining technology, its impacts on reclamation plans, and its suitability to the Rosemont Copper Project.

*The APP facilities at Rosemont, including the dry stack tailings, have been evaluated and determined to meet the design requirements of A.R.S. §49-243, R18-9-A202, and the Arizona Mining BADCT Guidance Manual.*

Comment 66:

The commenter questions the financial demonstration.

*See response to comments 12.*

Comment 67:

The commenter states that Rosemont has not demonstrated that facilities shall not cause a violation of AWQS, and that “throughout this APP, there is a fundamental lack of monitoring and a fundamental lack of contingency plans if something goes wrong”.

*See response to comment 52.*

Comment 68:

The commenter states that due to the leakage rate values listed in Table 2.2, BADCT has not been demonstrated and the liner design should be reconsidered.

*See response to comments 20, 21 and 22.*

Comment 69:

The commenter states that facilities have not been adequately designed to prevent unauthorized discharges in the event of severe weather events or earthquakes.

*The design of applicable facilities was evaluated and determined to meet the requirements for BADCT.*

Comment 70:

The commenter questions the adequacy of the POC wells.

*See response to comment 3.*

Comment 71:

The commenter states that the APP provisions regarding self monitoring and inspection/access need to be rewritten accordingly.

*The Aquifer Protection Permit requires Rosemont to conduct various monitoring actions, keep detailed records, and report the results of monitoring to ADEQ. In addition, the Department will conduct inspections of the mine site and verify that all APP requirements, including monitoring and recordkeeping, are being met.*

Comment 72:

The commenter states that, given the referenced 10,000,000 gallon flow design for this facility, it is necessary that discharges, either point or non-point, be monitored in addition to POC monitoring.

*See response to comment 30.*

Comment 73:

The commenter states that all well information should be included in an updated Table 2.4. This should include surface elevation, depth to water table, depth to basement, screened interval, total depth of well, etc. This information has changed so frequently it is impossible to assess the POC process as it relates to the APP. It is crucial that water samples for testing be extracted from both the alluvium and the bedrock.

*Aquifer Protection Permits contain the name and location of the POC wells, along with monitoring requirements. Information regarding well design and aquifer characteristics is maintained in the public file.*

Comment 74:

The commenter states that because Alert Levels are not required to be set prior to the 8 quarters of sampling, the APP must make it clear that the 8 quarters of sampling be done before any ground disturbance of the area is undertaken. To do otherwise would compromise the intent of "ambient". According to the Compliance Schedule 3.0, this apparently means that no ground disturbance can take place for a period of 24-29 months after well installation.

*See response to Comment #5. There is no authority in statute or rule to require the completion of the ambient monitoring program prior to ground disturbance.*

Comment 75:

The commenter states that under the timelines set forth in this APP, Rosemont would be allowed to contaminate water resources for at least two years and 3 months before Rosemont recommends a discharge limit for dangerous pollutants.

*See response to comments 5, 15 and 22.*

Comment 76:

The commenter states that until the current groundwater conditions in this area are sufficiently known and fully documented, it is reprehensible that DEQ would even consider issuing the APP. The individuals in the vicinity of and downstream of this area should know the current groundwater conditions if for no other reason upon which to establish a baseline condition against which threats would be evaluated.

*Please see the response to comment 5. The Department believes that sufficient time is available to obtain samples representative of ambient conditions before potential discharges from the APP discharging facilities can migrate through the vadose zone and through groundwater to the POC wells.*

Comment 77:

The commenter states that it is necessary that surface waters be monitored.

*See response to comment 32.*

Comment 78:

The commenter suggests revisions be made to the timeframes allowed in the permit for taking action and reporting in the event of Alert Level exceedances.

*Alert Levels for groundwater monitoring will be set at concentrations that allow for early detection of pollutants potentially reaching a POC location. The timeframes established in the permit are typical of permits for other mining facilities and there is no indication that this facility warrants revised timeframes.*

Comment 79:

The commenter requested that all documents and records pertaining to this APP should be open and available for public review.

*All documents related to the application have been and shall remain available as part of the Rosemont APP application file for review.*

Comment 80:

The commenter states that the APP does not define at what point after the temporary cessation goes beyond 60-days does it become a permanent closure of the facility and thus necessitating the implementation of closure and post-closure plans. Moreover, the APP needs to define the amount of time that would require reissuance of a new APP and resubmit the APP for public review and comment.

*Statute and rule do not provide timeframe limits for which a facility can remain in temporary cessation before initiating closure. A permit holder must submit a temporary cessation plan to ADEQ for approval.*

Comment 81:

The commenter states that the closure plan must be a condition of the permit issuance and available for public review and comment.

*See response to comments 11 and 79.*

Comment 82:

The commenter states that Rosemont should submit groundwater data analyses to DEQ for review. For those cases where the wells were sampled appropriately and analyzed by EPA protocols, and where the "ambient" value is lower than the AAWQS Standards, then a "provisional" AL can be set equivalent to AAWQS that shall be subject to completion of 8 rounds of testing.

*Groundwater samples taken from wells in the area may not contain constituents in the same concentrations as groundwater obtained from POC monitoring wells. For this reason, data from other wells cannot be used to set compliance criteria in the permit. Under the Aquifer Protection Permit Program, ADEQ is charged with permitting discharges so that pollutants discharged will not cause or contribute to a violation of aquifer water quality standards, or will not further degrade an aquifer that at the time of the issuance of the permit exceeds the aquifer quality standard for that pollutant, at an applicable point of compliance.*

*Background water quality data has been submitted to the ADEQ, and is available in the APP file. It is available upon request to the ADEQ Records Center. Only data collected at a point of compliance well is used for permit compliance purposes.*

The comment also suggests that the APP note potential health impacts of contaminants for which discharge limits are not established be listed in the APP.

*The discussion of health impacts for various contaminants is readily available in the published literature. It is not appropriate to include such a vast volume of data in the body of an APP.*

Comment 83:

The commenter states that the APP allows Rosemont to contaminate groundwater for two years before setting limits.

*See response to comments 5, 15 and 22.*

Comment 84:

The commenter questions Rosemont's financial capability.

*See response to Comment 12.*

Comment 85:

The commenter states that the records derived from monitoring activities should be made available for public review.

*All documents related to permit compliance have been and shall remain available as part of the Rosemont APP file for review.*

The commenter also states DEQ must conduct regular and unannounced spot inspections to ensure that compliance with this and the other provisions.

*Inspections are conducted to ensure compliance with permit conditions.*

**C.H. Huckelberry, Pima County Administrator's Office-**

Comment 86:

The commenter stated that Pima County objects to the issuance of this APP. The application is premature, and the issuance of the permit is against Arizona Administrative Rules.

*As noted by the commenter, the federal decisions on the EIS may change the locations and design of several APP discharging facilities. ADEQ recognizes that such changes could require a significant amendment to the APP. The requirements of the Arizona Revised Statutes and Arizona Administrative Code were evaluated as applied to the current application before ADEQ and the application was found to meet the requirements.*

Comment 87:

Pima County requests a new Draft APP be issued for public notice and comment. A new Draft APP is needed to correct serious errors and major deficiencies in the APP and in the application materials.

*ADEQ disagrees with the assertion that the application was incomplete. A thorough*

*review was conducted by ADEQ staff and through several exchanges of questions and additional information from the applicant, the application was found to be complete and meet the regulatory requirements.*

Comment 88:

The commenter stated that if this APP is to be granted without additional public notice and comment, Pima County requests this APP be issued only for the first phase of mining, through closure of the heap leach.

*Under A.A.C. R18-9-A201(F) Individual Aquifer Protection Permits are issued for the life of the facility. The applicant has demonstrated compliance with all regulatory requirements necessary for issuing an Aquifer Protection Permit. The Applicant has provided the information necessary to obtain a permit for both the heap leach operation and the sulfide ore processing operation. For the above reasons, the Department has no basis upon which to issue a partial permit for one aspect of the mine. Further, Rosemont must provide a detailed closure plan for the heap leach facility which will be evaluated when much more information is available for consideration.*

Comment 89:

The commenter presents several arguments that the open pit should be included in the list of discharging facilities, including that stormwater runoff and groundwater seepage constitute discharges, that chemical gradients may overcome hydrologic gradient, and other reasons.

*The pit is not a categorical discharging facility. The stormwater runoff and groundwater seepage from the sides of the pit are not considered discharges under the statutory definition (A.R.S. §49-250(B)(9)). The pit will be dewatered during operation and act as a hydrologic sink both before and after operation ceases. Groundwater wells will be in place to monitor flow and groundwater quality to allow evaluation of the effects of the pit on flow and quality. ADEQ does not agree that the concentrations of potential pollutants in the pit lake will create a chemical gradient that will overcome the hydrologic gradient. ADEQ does not agree that there is a reasonable probability that potential pollutants in the pit lake will reach the aquifer at levels above the AWQS at the points of compliance. If the pit is used in the future as a disposal or storage option, it will need to be added to the permit as appropriate. Mention of the pit in the contingency planning for the stormwater flow through drain system is not sufficient reason to add it as a discharging facility to the permit.*

Comment 90:

The commenter suggested that Perimeter Stormwater Control Design for the Tailings Disposal Facility is inadequate.

*Detailed design information can be found in the Tetra Tech documents titled "Site Water Management Update Volume 1 and 2 of 5 Rosemont Copper Project", dated April 2010. As a note, stormwater controls for the eastern perimeter of the Dry Stack Tailings Facility are comprised of the natural drainage at the toe of the tailings along with the*

*perimeter access road and perimeter ditches. These controls can also be found described within the above referenced documents.*

Comment 91:

The commenter states that the sediment control facilities were designed using a method inappropriate for estimating sediment production from mining sites.

*A document reference has not been provided for this comment. It does appear that the comments and Appendix attachment is in regard to the federal Draft Environmental Impact Statement which is not part of ADEQ's program area.*

Comment 92:

The commenter stated that the flow-through drains are inappropriate for this use, are not adequately sized, and cannot remain in perpetuity without maintenance.

*The flow-through drains have been determined to be adequately sized. Detailed design information can be found in the Tetra Tech documents titled "Rosemont Flow-Through Drain Design", prepared by Tetra Tech, April 5, 2010; "Rosemont Flow-Through Drain Sizing", prepared by Tetra Tech, April 5, 2010; "Rosemont Flow-Through Drain Summary", prepared by Tetra Tech, August 31, 2010; "Rosemont Flow-Through Drain Contingencies", prepared by Tetra Tech, March 8, 2011; "Flow-Through Drain Contingencies and Passive Containment", prepared by Tetra Tech, May 10, 2011; and "Rosemont Response to ADEQ December 3, 2010, deficiency letter dated February 11, 2011" (Item 5, page 19/20). The Tetra Tech document states that the 100-year 24-hour storm event was used to analyze and design pipe structures upstream of the flow-through drains. The flow-through drains are designed using Local and General probable maximum precipitation (PMP) events, as well as other design elements (detention reservoirs, etc.).*

Comment 93:

The commenter states that estimated Closure and Post-Closure Costs do not account for All APP Closure and Post-Closure Activities; Revise Value of Surety Bond.

*Rosemont has provided acceptable estimated closure and post-closure costs per A.A.C. R18-9-A201(B) as demonstrated in their submittal documents to ADEQ. This includes the most recent documents which are titled "APP Closure Costs and Post-Closure Period – Cost Breakdown", prepared by Tetra Tech, October 20, 2011 and "Rosemont Response to ADEQ June 30, 2011, deficiency letter dated August 31, 2011" (page 15). The County may wish to review the October 20, 2011 document and provide missing closure/post-closure items associated with APP discharging facilities. However, ADEQ rules are specific to those closure and post-closure costs associated with APP defined discharging facilities only. This document also provides answers to the requests: Costs/financial assurance are broken down by regulatory authority (private versus federal); updated closure and post-closure costs are provided; and post-closure monitoring.*

Comment 94:

The commenter states that even revised financial assurances leave the public with long-term costs; A contingent environmental fund is needed.

*A.R.S. §49-243(N) and A.A.C. R18-9-A203 provide ADEQ authority to require closure and post-closure cost financial assurance for APP facilities. The ADEQ does not have authority to require a financial mechanism for mitigating unforeseen environmental impacts from the mine site after closure and post-closure.*

Comment 95:

The commenter states Pit Backfilling with Waste Rock/Tailings should be evaluated as BADCT.

*The pit is not a categorical discharging facility and does not receive a discharge as described in previous comments and responses. Therefore, BADCT does not apply to the pit or pit lake. The Commenter provides several suggestions and alternatives that could be considered by the Applicant, however, because the pit is an unregulated facility, ADEQ does not have the authority to require the Applicant to consider these.*

Comment 96:

The commenter states that BADCT for Heap Leach Pad should be revised to include a Leak Collection and Removal System.

*Per the BADCT Guidance Manual, a double-liner system with leak collection and removal system (LCRS) is not considered a requirement to meet BADCT for heap leach pads.*

Comment 97:

The commenter describes the hydrogeologic conditions below the Heap Leach Pad and concludes that under these conditions, subsurface contamination will more readily spread with groundwater. Additionally, commenter indicates that the conditions are not conducive to liner installation and raises liner integrity as a problem.

*Groundwater will be monitored at the POCs to confirm the BADCT for the facility is effective (see comment 52). Liner installation and integrity is addressed in the facility design and specifications, operation, and the CQA Plan for the Heap Leach Pad (see comments 96, 98, 99, and 100).*

Comment 98:

The commenter states geotextile material is needed over the geomembrane liner.

*Per the BADCT Guidance Manual, a double-liner system with leak collection and removal system (LCRS) is not considered a requirement to meet BADCT for heap leach pads. Also not required per BADCT is the use of a geotextile between the geomembrane liner and above drainage layer. The design of the drainage layer above the geomembrane liner was changed to 1½-inch material as an alternate to the ¾-inch. ADEQ approved of this change predicated on liner puncture and shear strength tests completed by Rosemont*

*and presented in the document titled "Rosemont Heap Leach Facility Permit Design Report Volume 1", pages 13, 14, and 22, and "Rosemont Heap Leach Facility Permit Design Report Volume 2", Appendix I, prepared by Tetra Tech, and dated May 2009. Per Volume 1 (Section 4.0) of the referenced document, perforated HDPE pipe will be used within the drainage layer.*

Comment 99:

The commenter states that Rosemont should prepare a professional heap leach pad base grading plan.

*A detailed heap leach pad site grading plan has been provided in the document titled "Rosemont Heap Leach Facility Permit Design Report Volume 2, Attachment A - Technical Specifications", Section 3.6, prepared by Tetra Tech, and dated May 2009.*

Comment 100:

The commenter states that Rosemont should prepare a professional construction Quality Assurance Plan for the Heap Leach Pad Base Lining System.

*This plan is provided within the document titled "Rosemont Heap Leach Facility Permit Design Report Volume 2, Construction Quality Assurance (CQA) Plan", prepared by Tetra Tech, and dated May 2009. The Construction Quality Assurance Plan prepared by Tetra Tech has been reviewed and accepted by ADEQ and covers the requirements of BADCT Appendix D.*

Comment 101:

The commenter states that as proposed, the Flow-Through Drain System is a Tailings Disposal Facility.

*ADEQ does not consider the flow-through drain system an APP discharging facility. The flow-through drain system is an engineered stormwater management system and is not a mine process or facility. Tailings disposal shall not be permitted within the flow-through drain system.*

Comment 102:

The commenter states that Rosemont should prepare a Construction Quality Assurance Plan for the Flow-Through Drain System below the Tailings Disposal Facility.

*A CQA Plan specifically for the flow-through drain system located below the dry stack tailings is not required by under ADEQ's BADCT requirements. An overall CQA Plan has been developed. Information regarding construction techniques, geo-synthetic material deployment, waste rock material, etc. has been provided in "Site Water Management Update Volume 1 of 5 Rosemont Copper Project", Section 6.0, Figures 37-45, prepared by Tetra Tech, and dated April 2010.*

Comment 103:

The commenter states that the BADCT Demonstration is inadequate for surface impoundments.

*ADEQ's BADCT Guidance Document Section 2.2 for Non-Stormwater Ponds does not indicate the need for a double liner system. The PLS and Raffinate ponds are described (draft permit Table 4.1.1) as having the required double liner system and LCRS. The Primary Settling Basin (PSB), as appropriate, has been determined to meet BADCT for Surface Ponds and does not require a double liner with LCRS. Source monitoring is not required per BADCT. Solution/effluent characterization for Process Ponds (PLS and Raffinate Ponds) and Surface Ponds is required initially for pond design purposes but not required in the APP as on-going monitoring.*

Comment 104:

The commenter states that BADCT is needed for other areas.

*The potential for discharge from Waste Rock Dumps is addressed in the BADCT Guidance Manual (Appendix B.1.2) and has been evaluated for the Rosemont Waste Rock Storage Area. The Rosemont Waste Rock Segregation Plan clearly identifies burial depths for potentially acid generating (PAG) waste rock regarding water management ponds (basins). The Plan also outlines where PAG waste rock can be placed. The following Technical Memorandums explain the Waste Rock Segregation Plan: The August 31, 2010 document titled "Rosemont Waste Rock Segregation Plan, prepared by Tetra Tech: Rosemont Waste Rock Segregation Plan – Revision 1", prepared by Tetra Tech, dated January 25, 2011; and "Potential Source Volumes and Chemical Makeup for Area-Wide Fate and Transport Modeling – Rosemont Copper Project", prepared by Tetra Tech, dated August 23, 2010. The flow-through drain system has been discussed previously and was referenced. The compliance point dam is a general permit facility pursuant to A.R.S. §49-245.01 and does not require BADCT review.*

Comment 105:

The commenter states that the APP ignores potential sources from mine treatment facilities.

Sampling of source waters including the PWTS, Primary settling basin, Raffinate Pond or PLS pond is not included in the Draft APP. We presume that sampling of these sources was not mentioned because the design is considered for zero discharge. However, how will one know what constituents to sample for in the compliance wells if no source sampling is completed to characterize the potential pollutants?

*The permit requires that all metals with Aquifer Water Quality Standards will be monitored at Point of Compliance monitoring wells.*

The APP assumes that leak detection systems are not needed for all ponds because the ponds will have liners and meet BADCT. Leak detection has been proven to work and prevent disasters before they happen. Prevention is certainly much less expensive than cleanup. This APP is only providing leak detection on the PLS and Raffinate ponds; it is

recommended that leak detection is provided on all the ponds.

*See response to comment 103. The Process Water Pond is also double lined.*

The water will eventually generate slurry of elevated TDS and sulfate along with numerous chemicals from the milling and flotation process such as xanthates, Alky Aryl Oxime, Petroleum Distillates, Sulfosuccinate surfactant, Alkyl Xanthate salts, Nalco 7873, alcohol/hydrocarbon blends and others. A more detailed water balance of this water and an accounting of the residues it will produce are needed but not apparent in any of the documents examined. In addition, the process water, especially in the sulfide and oxide holding ponds, needs to be sampled and characterized in case a breach in the ponds leaks the liquid to the groundwater.

*The purpose in requiring a water balance or an accounting of residues is unclear so long as the material is compatible with the liner.*

Comment 106:

The commenter states that the APP ignores sources of discharges from tailings disposal facility; BADCT is needed for potential discharges.

*The Dry Stack Tailings infiltration, seepage, fate, and transport modeling is addressed in the document titled "Infiltration, Seepage, Fate, and Transport Modeling Report Revision-1", prepared by Tetra Tech, and dated August 2010.*

Runoff from the tailings top surface will not be discharged and instead will be collected using perimeter ditches and by sloping the tailings to drain to low spots or evaporation ponds located on the tailings surface where water can evaporate or be pumped to containment ponds.

*Section 5.2 of the referenced design document indicates that this collected runoff will be pumped to a containment pond at the plant site if impounded for more than 15 days.*

The surface will be graded so that runoff from the PMP is directed towards low point(s) and, if required, an overflow rundown off the TSF will be included. Two decant structures have been designed to drain overflow waters from detention basins located on top (northwest and northeast corners) of the *Tailings Disposal Facility*.

*Section 8 indicates that the closure configuration will involve grading the surface to direct all runoff from the surface of the facility into perimeter water management structures. The surface will be reclaimed to act as a passive evapotranspiration system.*

As proposed in this APP, therefore, the management of surface water by ponding will promote infiltration of water into the tailings mass, with associated saturation of tailings materials and increased seepage rates and leachate production.

*During operations, direct precipitation will be not be allowed to collect on the Dry*

*Stack Tailings Facility for longer than 15 days. After closure, the water will be routed to perimeter structures and an evapotranspiration cover will be used on the top of the tailings facility. Also, the seepage analysis considered the greatest annual average precipitation of 22.2 inches, and the lowest average annual pan evaporation of 71.5 inches from the Santa Rita Experimental range weather station data (Section 6.4), providing a conservative estimate of surface climatic flux. Infiltration through the tailings facility is not expected.*

The use of flow-through drains below the base of the *Tailings Disposal Mound*, as depicted on Fig. 600-C1-940 of the *AMEC 2009 Dry Stack Report*, guarantees the mixing of surface water flows from watersheds adjacent to the tailings mound (non-contact water), contact surface water from the side slopes and upper surface of the tailings mound, and seepage fluids / leachate from the tailings stack.

*Side slopes consist of inert waste rock buttresses, therefore runoff will not come into contact with tailings.*

To get a good statistical representation, more testing than this (PHREEQ model) should be performed for a facility of this magnitude.

*These are bench scale studies, from prepared samples. They are not actual tailing samples from processing at the site. It is not clear that additional samples would provide useful information.*

Comment 107:

The commenter stated that errors and omissions in the alert levels and discharge limits must be addressed.

Table 2.2 and the note regarding AL1 and AL2 should be moved to the Discharge Limitations section 2.3 of the permit. If the LCRS limits are included in the Operational Requirements section of the APP, it implies that these limits do not have the regulatory status of discharge limitations given in A.R.S. §49-201(12) or statutory enforcement provisions that apply to DL violation.

*As described in the footnote for Table 2.2, the exceedence of AL2 is only considered a violation of the permit if the permittee fails to perform contingency requirements as required by Section 2.6.2.5.*

Change the wording in the “note” from “shall be exceeded” to “is” exceeded.

*This comment will be incorporated into the permit language.*

It is understood that the terms AL1 and AL2 are jargon commonly used in technical discussion of liner leakage control. However, the terminology for Alert Level 2 should be changed because it is confusing to have a discharge limitation referred to as an alert level. Alert levels have a specific regulatory function described in A.R.S. §49-243(K)(7).

Discharge limitations are distinctly addressed under A.R.S. §49-243(K)(4) and the exceedance of a DL has specific enforcement provisions under the law.

*The language in the footnote and Section 2.6.2.5 will be modified to clarify that AL2 is not a Discharge Limit.*

Discharge monitoring in section 2.5.1 of the permit states “Not applicable for this permit.” ADEQ should require monitoring of the stormwater coming out of the flow-through drains to verify that tailing material has been excluded and that the stormwater does not contain low pH fluids.

*Compliance sampling at the nearest POC well to the dry stack tailings will satisfy this request. There is no BADCT requirement for sampling flow through drains for any BADCT listed facility.*

Comment 108:

The commenter stated that in section 2.3.1, it is entirely proper to limit the height of facilities as a DL. However, ADEQ should specify the exact height limitation here so that the DL is clearly established within the permit. Referring to the permit application for this limitation makes for an ambiguous permit that may be difficult to enforce.

*The permit references approved plans and Table 4.1.1. of the permit which specifies the maximum height for the Heap Leach Pad.*

Comment 109:

The commenter stated that Rosemont should monitor carbon disulfide in this APP. This chemical is regulated under A.R.S. §49-243(I) such that ADEQ should limit its discharge into the aquifer to the “maximum extent practicable regardless of cost.” Therefore, with respect to this pollutant, ADEQ should establish a DL, rather than an AQL or AL, which is set at the non-detect level.

*ADEQ recognizes that carbon disulfide may be a pollutant associated with the flotation process and may be present in the sulfide ore processing facilities. The permit limits the discharge to the aquifer to the maximum extent practicable by requiring BADCT for all discharging facilities, not by setting a discharge limit of non-detect which would effectively prohibit the placement of a particular pollutant into the facilities. Section 2.3, Discharge Limitations, indicates the discharges that are allowed to the permitted facilities based on the BADCT demonstration for each facility which has been found to meet regulatory requirements. The BADCT demonstrations have shown that the allowable discharges to the facilities will be effectively contained within the facilities and will not cause an AQL exceedance at the POC. Please note that carbon disulfide is included in groundwater monitoring at the points of compliance.*

Comment 110:

The commenter states that monitoring is based on inadequate basic data and cites interpretations by Dr. Robert Casavant, R.G., that the commenter indicates differs

significantly from the application.

*The level of data collected through water levels, water quality data, aquifer testing, and modeling is not inadequate, and is comparable to and generally exceeds data collection at other APP-permitted mine sites throughout the state. Enough data has been submitted to provide the basis for the creation of a point of compliance network on the downgradient edge of the pollutant management area. The ADEQ has not evaluated Dr. Casavant's map, and cannot do so without the submission of all data used in its creation. The scale of the map submitted makes evaluation difficult, but cursory review of the map appears to indicate a predominant northeasterly flow direction, which is the same as the data used to prepare the monitoring well network in the permit, and agrees with Dr. Casavant, who indicates a dominant NE component to groundwater flow. The level of data provided is sufficient for setting the locations of the POC well network.*

Comment 111:

The commenter states the POC locations listed in Table 2.7, p.7 of the Draft Permit are incorrect.

*The latitudes and longitudes will be corrected on the final permit to match the locations depicted on Figure 1.*

Comment 112:

The commenter states that spacing of the monitoring well network is inadequate for site conditions.

*See response to comment 113.*

Comment 113:

Other Detailed Comments Regarding POC Network:

The commenter suggested the APP should state the monitoring objectives for each POC well in Table 2.4 or in the body of the permit, Section 2.5.

*The monitoring objective for POC wells is to determine compliance with the requirement that pollutants discharged will not cause or contribute to a violation of aquifer water quality standards at the POCs pursuant to A.R.S. §49-243(B)(2-3). See also responses to comments 3, 6, 10, 18, 29 and 121.*

The commenter stated in subsection 2.5.3.4, item #1, it is not clear why only eight samples rounds are used in the calculation. It would seem that more sample data would provide better statistical treatment. If the purpose of this provision is to limit the timeframe for ambient data collection, it should be stated as a timeframe.

*See response to comment 5.*

The commenter stated that new POC well installation, as described in the table of section 3.0, should include either a tracer test or pump test to verify that the wells installed have significant connection with the bedrock fracture-flow system.

*This level of data is not initially necessary for APP purposes in every well installed. If the installed wells are dry, or become unusable as POC wells, other wells will be required upon review of the installation reports, or based upon ongoing water quality and/or water level measurements during compliance monitoring.*

The commenter stated in section 3.0, change the well screen description to read, "The well shall be appropriately screened at least 10 feet above that water table and no more than 50 feet below the water table for an unconfined aquifer, or no more than 50 feet in length at the top of a confined aquifer."

*The section is appropriate as written. The requirement will remain "within 10 feet above the water table."*

The commenter stated that the compliance schedule should have a requirement for submittal of a well completion report to ADEQ along with an application for permit amendment to include each new well.

*ADEQ agrees and has modified the compliance schedule to include a well completion report. The permit amendment will be required under the compliance schedule at the time of submission of the results of the ambient monitoring in all POC wells.*

Comment 114:

The commenter states that as shown on the Figure 2 above, add two new POC wells to the Point of Compliance monitoring well network in the locations indicated on the eastern side of the *Tailings and Waste Rock Disposal Mound*. This includes one additional well between POC #2 and POC #4, and one additional well between POC #5 and POC #6, and the nested verification monitoring wells upgradient of POC #3.

*See response to comment 115.*

Comment 115:

The commenter states that POC #1 will monitor subsurface movement into Scholefield Canyon, a tributary of Davidson Canyon. A shallow well is needed here to monitor shallow recent alluvium. This POC well would be used to monitor groundwater seepage through the Dry Stack Tailings and possibly the Waste Management Area. There are currently two wells in this area: an intermediate well (HC-4A; perforations from 100-640 feet) and a deep well (HC-4B; perforation from 680-1000 feet). Water levels in these two wells were approximately 75 feet and 296 feet, respectively, in November 2008 and showed an upward gradient.

*The new POC well will be a shallow well, intercepting the uppermost aquifer in the vicinity of HC-4A and HC-4B. ADEQ has requested that HC-4A and HC-4B remain available for use as needed.*

Comment 116:

The commenter states that HC4A and 4B wells should either be added to POC #1 as verification monitoring wells for use in contingency planning, or provisions should be made in the contingency plan for drilling new intermediate and deep wells should contamination be detected. The perforation intervals should be reduced by drilling new wells or using spinner logs (electro-magnetic at low flows), video logs, or a combination of down hole methods to assess where flow comes into the wells, and then reducing the interval to 60 feet with packers or bentonite to comply with the 60-foot screen interval discussed in the draft permit.

*The permit has provisions for corrective actions, including the drilling of new wells, if contamination is detected in POC #1 at levels above the alert level or aquifer quality limit (See Section 2.6).*

Comment 117:

The commenter states that Rosemont should design the location and construction of POC2 to detect deep aquifer discharges to Scholefield Canyon. Currently the proposed POC #2 is located too far uphill and will not be screened in recent alluvium along Barrel Canyon. Recent alluvium is more likely to reflect pollutants emanating from the tailings.

*APP compliance is evaluated in the uppermost aquifer (A.R.S. §49-244).  
Contamination in the limited alluvium in Barrel Canyon will be monitored at POC#3.*

Comment 118:

The commenter states that the APP should add new verification monitor well site to the permit as shown in Figure 2. We propose that they be similar in construction to existing downgradient wells RP-2A, RP-2B and RP-2C. The proposed nested wells are located closer to the proposed tailings facility than POC3 and should be used as verification monitor wells in the contingency plan for POC3. The contingency plan should identify specific ALs that would indicate a failure of the BADCT system for the lined facilities has occurred.

*The APP statutes and rules provide no authority to require monitoring for compliance with AWQS in areas internal to the pollutant management area. POC #2 is within 750 feet of the edge of the Dry Stack Tailings Impoundment, and will be used in lieu of the proposed verification well.*

Comment 119:

The commenter states that POC 3 contingency planning needs to use the proposed nested wells as verification monitoring sites.

*See response to comment 117.*

Comment 120:

The commenter states that POC 3 needs to be moved within the PMA to wells RP-2A, 2B and 2C. These existing wells are immediately downgradient of proposed POC#3. RP-2A is currently in recent alluvium and screened 10-30 feet, 30 feet deep with a depth to water of 20-29 feet in 2008-2009. The other wells are intermediate (RP-2B screened 80-200 feet; water level 27-33 feet in 2008-2009) and deep (RP-2C screened 240-500 feet; water level 29-35 feet in 2008-2009), showing upward gradients. These wells should be replaced with appropriate shorter 60-foot screened intervals where water is flowing, or using spinner logs (electro magnetic at low flows), video logs, or a combination of down hole methods to assess where flow comes into the existing wells, and then reducing the interval to 60 feet with packers or bentonite to comply with the 60-foot screen interval discussed in the draft permit. Alternatively, a low flow sampling technique could be used at a discrete position within the screened interval.

*POC #3 is intended to be at the location of the RP-2 series wells. A new well will be installed. Recent water levels were documented at levels above the shallowest well screen (in RP-2A). The ADEQ has requested that the existing nested RP-2 series be maintained for use as needed.*

Comment 121:

The commenter states that a new POC well is needed near the midpoint between POC 2 and POC 4, in the NE1/4 of the SE1/4 of Section 28, Township 18 South, Range 16 East. The new POC should have at least one well covering the shallow to deep aquifer zones. Three nested wells similar to wells RP-2A, RP-2B and RP-2C would be superior to one monitoring well, as the shallow well could identify seepage through the dry stack tailings and the deep well could capture possible flow from the open pit.

*The inclusion of an additional POC well in this general area is considered appropriate, and will be added to the final APP. Nested wells are not necessary, as compliance is determined based upon water quality in the uppermost aquifer (A.R.S. §49-244). Seepage monitoring is not considered to be useful for monitoring compliance with AWQS. The open pit is a groundwater sink, not a discharging facility.*

Comment 122:

The commenter states that POC 4 will need a well to monitor the shallow zone (perforation intervals from near surface to 100 feet). This will monitor the recent alluvium and Basin Fill. This well location is close to an unnamed intermittent wash. If the well is dry in recent and basin fill material it should be used to detect recharge from the future dry stack tailings since it is probably not connected to the other deeper formations unless there are fractures or fissures nearby. The current wells near POC-4 site (RP-3A and 3B) are labeled as a shallow and deeper characterization wells. RP-3A has perforated intervals from 100 to 440 feet- Salero Tuff), suggesting that it is more of an intermediate characterization well. The deepest well (RP-3B) at this location has perforated intervals from 460 to 600 feet (Salero, undivided), which is more of a deep characterization well (measured water levels were ~ 75 feet and 176 feet, respectively, in

November 2008 from these wells). These wells reflect an upward vertical gradient showing confined aquifer behavior.

*A well at POC-4 will be installed under the compliance schedule, and will be used to determine water quality in the uppermost aquifer. ADEQ has requested that the existing nested wells be maintained for use, as needed.*

Comment 123:

The commenter states that RP-3A and 3B should be added as a POC-4 nest of wells to monitor vertical movement of potential contaminants or be replaced with narrower screen intervals. The perforation intervals should be reduced by drilling new wells or using spinner logs (electro-magnetic at low flows), video logs, or a combination of down hole methods to assess where flow comes into the wells, and then reducing the interval to 60 feet with packers or bentonite to comply with the 60 foot screen interval discussed in the draft permit.

*See immediately previous comment. If it becomes necessary to use these wells, rather than the new shallow well, they will be rehabilitated as necessary. The ADEQ is aware of the limitations associated with the screened intervals in these wells.*

Comment 124:

The commenter states that POC 5 (RP-4A) needs an additional well to cover the shallow zones. RP-4A is labeled a shallow well and has perforations from 160 to 540 feet (Basin Fill), which is more of an intermediate and potentially confined aquifer well. A shallow well is needed from 0-230 feet to establish if there is a vertical gradient in the area or this is an unconfined condition. Water level was 181 feet in November 2008 for RP-4A. Perforations are too extensive for RP-4A to establish if conditions are confined or unconfined. RP-4B labeled as an intermediate well has perforations from 580-1,000 feet (Apache Canyon), which covers the deeper confined aquifer. Water level in RP-4B was approximately 195 feet in November 2008, showing confined upward gradient conditions. Wells RP-4A and 4B should be added as a POC-5 nest of wells to monitor potential wells to monitor potential unconfined conditions and deeper vertical movement of potential contaminants. The perforation intervals should be reduced by drilling new wells or using spinner logs to assess where flow comes into the wells and then reducing the interval to 60 feet with packers or bentonite to comply with the 60 - foot screen interval discussed in the draft permit.

*Rosemont currently plans to install a new well at this location, which will be screened in the uppermost aquifer. If the existing well RP-4A is to be used, low-flow sampling will be required, or appropriate rehabilitation may be proposed by Rosemont.*

Comment 125:

The commenter states that POC 6 does not have any existing wells at this time. Three nested wells should be constructed at this site to cover the full range of aquifer levels (shallow, intermediate and deep). Groundwater flows past this point into the Oak Tree Canyon watershed and Upper Cienega groundwater sub-basin.

*The well to be installed at this location will be screened in the uppermost aquifer at the site, which is the location required for compliance monitoring (A.R.S. §49-244).*

Comment 126:

The commenter states that a POC needs to be added near the midpoint between POC 5 and POC 6 (NE ¼ of Section 5, T19S, R16E) to capture groundwater moving east towards the headwaters of the east fork of Davidson Canyon. Based on the available groundwater contours, the flow direction past this mid-point area is not captured by either POC 5 or POC 6. There are currently no existing wells in this location. Three nested wells should be constructed at this site to cover the full range of aquifer levels (shallow, intermediate and deep).

*Based upon the groundwater flow direction in this area, POC #5 is considered to be adequate to monitor groundwater for discharge in this area. The monitor well spacing included in this permit is similar to that required in other mining APPs throughout the state, and reflects a balance of cost versus the usefulness of the additional information provided.*

Comment 127:

The commenter states that three nested wells should be constructed at the POC-7 site to cover the full range of aquifer levels (shallow, intermediate and deep).

*The well to be installed at this location will be screened in the uppermost aquifer at the site, which is the location required for compliance monitoring (A.R.S. §49-244).*

Comment 128:

The commenter states that at least one additional verification monitor well should be established in the both Trail Canyon Wash and on the upstream side of the residences along E. Singing Valley Road for contingency purposes.

*Based upon available topographic maps, POC-7 appears to adequately monitor the wash upstream of the residences and E. Singing Valley Road, and Trail Canyon Wash. It is not clear that additional verification wells are necessary at this time, as compliance can be monitored at POC#7.*

Comment 129:

The commenter states that ADEQ should provide another APP Draft containing correct POC locations and monitoring objectives with adjusted comment period for public review, so that an adequate assessment of the monitoring program can be made.

*Although minor and technical conforming changes will be made to the permit as the result of public comment, changes will not be of such a scope that the Department will conduct another public notice period for this permit.*

Comment 130:

The commenter states that ADEQ should have an opportunity to require modifications of the APP if at any time the impacts exceed those identified in the Forest Service's record of decision.

*See response to comment 9.*

Comment 131:

The commenter states that the Draft APP fails to identify and fails to protect existing surface water uses and standards.

*Discharges to surface waters are regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) and under Section 404 of the Clean Water Act (CWA) through federal agencies.*

Comment 132:

The commenter states that the Draft APP fails to address new surface water bodies.

*It is not clear from the comment what the "new" surface water bodies would be. Discharges to surface waters, which are Waters of the United States (WUS,) are regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) and under Section 404 of the Clean Water Act (CWA) as discussed above.*

Comment 133:

The commenter states that the APP should provide narrative water quality standards in APP for TDS, sulfate, in POC wells. The narrative standard should be set at 500 mg/l for TDS and 250 mg/l for sulfate.

*The parameters described by the commenter will be monitored in groundwater under the permit, but without compliance standards. ADEQ will not set quantitative discharge limits for narrative water quality standards.*

Comment 134:

The commenter states that flow rates, site conditions and water quality for all of the springs located within the facility should be reported via the APP during mining operations until such time as they cease to be accessible.

*ADEQ believes that monitoring of POC wells will be sufficient to this task and does not feel that monitoring of spring water quality under the permit is justified.*

Comment 135:

The commenter states that the APP should assure pit lake water meets all aquifer water quality standards, as well as water quality standards for Aquatic and Wildlife (warm water or cold water as temperature dictates) for arsenic, selenium, copper and mercury.

Also states ADEQ should apply the narrative standard of R18-11-405(B), and the surface water quality standards, which are more stringent for some of the metals, should be applied at the point of compliance in the Aquifer Protection Permit.

*There will be no pit lake to monitor during mining operations. Water quality in the pit lake will be monitored, as appropriate, under the closure and post-closure plans developed at the time of closure. Authority to enforce surface water quality standards are only applied to WUS.*

Comment 136:

The commenter states that ADEQ should provide a revised APP and new public comment period to rectify this (contingency plan) omission.

*ADEQ does not interpret A.R.S. §49-243(P) to mean that a Contingency Plan cannot be a permit compliance schedule item. ADEQ recognizes that A.R.S. §49-243(K)(3) gives the director authority to include contingency plan requirements in the permit, which have been included in Section 2.6. The compliance schedule requires submittal of a Contingency Plan within 90 days after the effective date of the permit. ADEQ will review the Contingency Plan to assure that it meets the regulatory requirements and specific contingency requirements set forth in the permit. The Contingency Plan will be public record and available for public review.*

Comment 137:

The commenter states that ADEQ should evaluate potential impacts on “Outstanding Waters” using the attached scope of work (Appendix D) to qualitatively and quantitatively analyze the impacts of proposed mining activities on volume, frequency, and magnitude of runoff to Davidson Canyon. Pima County requests the applicant to complete the analysis before the application is resubmitted.

*The request is beyond the scope of the Aquifer Protection Permit Program. Discharges to surface waters are regulated under the Clean Water Act programs, such as the Arizona Pollutant Discharge Elimination System (AZPDES) and under Section 404 permitting conducted through federal programs. See also response to comment 131.*

Comment 138:

The commenter states that ADEQ should evaluate the potential effects of sulfate emanating from the tailings to affect wetlands, including the potential to increase tamarisk abundance in affected areas. Complete the analysis before the application is re-submitted.

*See response to comment 137.*

Comment 139:

The commenter states that ADEQ is requested to clarify the meaning of “conveyance ditches that convey solutions from or to the Heap Leach Pad”.

For the APP application, Rosemont Copper should provide details regarding the two Heap Leach Facility piping systems between the Heap Leach Pad and the Plant Site, including proposed alignments, plan/profile drawings, the piping containment system, and material specifications.

These piping systems should be inspected at least weekly along their alignments to monitor proper function and leakage at the various pipe connections. Should leakage be observed, ADEQ should be immediately notified. If the leakage is documented as significant, as defined by ADEQ, an investigation of surface and subsurface contamination should occur.

*The conveyance (collection) ditches completely surround the Heap Leach Pad, drain to the PLS Pond, and provide secondary containment for a portion of the PLS piping system. As stated in the draft permit the conveyance ditches relate to the Heap Leach Pad only. A.R.S. §49-250(B)(22) exempts from the APP all pipelines. As a note, the general location for the pregnant leach solution (PLS) piping from the PLS Pond to the SX-EW Plant is shown on Figure 2-2 of the document titled "Rosemont Project Mine Plan of Operations", prepared by Augusta Resources Corporation, dated July 11, 2007.*

Comment 140:

The commenter states that for a massive mining industrial facility with an operational life of more than 20 years, a 5- year reclamation period, and long-term / permanent impacts to the public, the *Log Book Records* should be maintained for the entire life of the APP permit, including the post-closure monitoring and maintenance period. A.R.S. §49-243.K(8) provides a legal authority for ADEQ to do this: Such other terms and conditions as the director deems necessary to ensure compliance with this article. Annually obtain a copy of the *Log Book Records* from the applicant.

The commenter also states that Rosemont should provide Pima County and the U. S. Forest Service with copies of the Log Book records annually.

*ADEQ has the authority to review the log book and obtain copies at any time as needed, therefore, it is not necessary to obtain a copy of the log book annually from the permittee. ADEQ does not have the authority to compel the permittee to provide a copy of the log book to other entities.*

Comment 141:

The commenter states that Rosemont Copper must prepare and submit a final *Construction Quality Assurance* Report for the approximately 9-mile mine Flow-through Drain System. Include this requirement in the Actions and Submittals table within Section 3.0, *Compliance Schedule*, of the APP. The CQA Report must verify that the work undertaken was built in accordance with the *Construction Quality Assurance Plan*, and final technical documents, design drawings, and specifications.

Also states that ADEQ require the submittal of this CQA Report within 90 days after completion of construction of the Flow-Through Drain System.

*The CQA Plan and subsequent report for the flow-through drain system have been previously discussed. See Comment 102.*

Comment 142:

The commenter states that ambient water quality monitoring should include trend analysis to determine whether discharges have already affected ambient water quality at the POCs. The trend analysis should include water quality results from verification monitoring wells proposed earlier in our comments.

*Any trend analysis necessary can be performed using the ambient monitoring report data. The verification well comments were addressed previously. See response to comment 118.*

Comment 143:

The commenter states that ADEQ is requested to notify the Pima County Board of Supervisors of any temporary cessation of mining operations, and share with the Board of Supervisors the approved PLAN FOR MAINTENANCE OF DISCHARGE CONTROL SYSTEMS AND MONITORING.

The commenter also stated that written notice of the operational status of the permanent industrial facility should be provided to ADEQ every 6 months, and shared with the Pima County Board of Supervisors.

*ADEQ maintains public records that are available upon request. Any temporary cessation plan or operational status reports submitted by the applicant will be available for review by Pima County.*

The comment also states that the APP should specify a maximum time limit for “temporary cessation” and draw a distinction between “temporary cessation” and “closure” by defining a trigger for “notice of closure” and the “closure plan” requirement of Section 2.9.1.

*See response to comment 80.*

Comment 144:

The commenter states that Rosemont Copper should prepare a PRELIMINARY CLOSURE PLAN (Closure Strategy?) which specifically addresses—in a single document—the goals, methodologies and designs proposed for achieving clean closure at each of the nine discharging facilities regulated by the APP.

*Clean closure is not proposed for this facility. ADEQ has determined that the closure strategy provided in the permit application is sufficient to meet regulatory requirements under the permit including closure cost estimates.*

Comment 145:

The commenter states that Rosemont should provide within the *PRELIMINARY CLOSURE PLAN* a *Concurrent Reclamation and Closure Plan*, which specifically shows how Rosemont Copper might expect to achieve Partial Closure prior to Full Closure.

*The concurrent reclamation plan has been submitted as part of the application documents titled "Reclamation and Closure Plan, Section 5.5", prepared by Tetra Tech, dated July 2007. The concurrent reclamation requirements are listed in the draft permit in Section 2.2.4.1.*

Comment 146:

The commenter states that within the *PRELIMINARY CLOSURE PLAN*, Rosemont provide specific *Grading and Drainage Design Plans* with supporting engineering calculations which clearly show the entire facility *Stormwater Management System* at closure, including full design of all perimeter drainage channels through site bedrock hills and all planned Perimeter Containment Areas where surface water will be trapped against the base slopes of the *Tailings and Waste Rock Disposal Facilities*.

*Detailed plans will be provided prior to closure as required by the permit. See response to comment 11.*

Comment 147:

The commenter requests that within the *PRELIMINARY CLOSURE PLAN*, Rosemont should provide a *Reclamation Revegetation Plan* which clearly details all closure areas for the entire *Tailings and Waste Rock Disposal Facilities* which will be revegetated with a growth media substrate to achieve side slope erosion control and limit infiltration. Also clearly show all final grade areas which will not be completed with a growth media substrate, but only waste rock riprap on the upper surfaces and sideslopes (scree).

*Detailed plans will be provided prior to closure as required by the permit. See response to comment 11.*

Comment 148:

The commenter states that successful vegetation establishment on upper surface and side slopes of the closed *Tailings and Waste Rock Disposal Facilities* will require an initial application of growth media, and repeat applications as warranted due to slope erosion and rilling. Within the *PRELIMINARY CLOSURE PLAN*, provide a description, application methodologies, and supporting engineering details which demonstrate the placement of soil growth media on the waste rock side slopes of the *Tailings and Waste Rock Disposal Mounds* both during concurrent reclamation and at closure.

*Detailed plans will be provided prior to closure as required by the permit. See response to comment 11.*

Comment 149:

The commenter states that ADEQ is requested to provide this document (Preliminary Closure Plan) for public comment prior to issuance of an APP.

*The permit application includes the information required and has been provided for public review and comment.*

Comment 150:

The commenter states there is a need for Soils Management Plans as Part of Closure Plan.

*Detailed plans will be provided prior to closure as required by the permit. See response to comment 11.*

Comment 151:

The commenter states that the clean closure criteria for Heap Leach Facility Ponds are inadequate to detect or prevent leaks.

The commenter also requests removal of the HDPE liners and GCL for appropriate disposal.

Perform systematic testing of subsurface soils / weathered bedrock to determine if the industrial ponds have impacted the subsurface environment.

As part of the APP permit requirements, the public needs to know the subsurface sampling methodology and the suite of chemical parameters which will be tested. To this end, Rosemont Copper must prepare a *Heap Leach Facility Ponds Clean Closure Plan* which specifically details this information for approval by ADEQ.

Provide this document for public comment prior to issuance of an APP.

*This type of detail will be provided prior to closure as required by the permit. See response to comment 11.*

Comment 152:

The commenter states that the APP should be valid only for the first phase through end of heap leaching. The impacts associated with the next phase (sulfide operation) should be contingent on the Applicant maintaining compliance with all local, state and federal rules. Such a phased approach would give ADEQ the opportunity to evaluate the closure plan for the heap and to assess whether clean closure has been achieved before Rosemont Copper buries that facility in tailing material.

*See response to Comment 88.*

Comment 153:

The commenter states that in order to assess surface/subsurface contamination as part of closure of the mine plant site, Rosemont Copper should prepare a *Plant Site Closure Surface and Subsurface Testing Plan* which describes the methodology for performing

a systematic subsurface soil/bedrock sample collection and analytical testing program beneath the concrete foundations and tank lining systems of all plant site facilities which have used or contained hazardous materials or mixes.

For buildings, this must be performed following the breakage of concrete pads and prior to any "burial in place with cover material".

In addition, the Plan should include a testing program which specifies the methodology for sampling and analytical testing of the broken concrete pad materials.

*Detailed plans will be provided prior to closure as required by the permit. If unauthorized discharges from APP discharging facilities occur, the permittee will need to address them in the closure and post-closure plans. Disposal of broken concrete pad material will need to meet applicable regulatory requirements for characterization sampling and waste disposal at the time of closure.*

Comment 154:

The commenter states that information included in the draft APP regarding post-closure for the proposed Rosemont Mine is woefully inadequate with respect to management of post-closure activities at the proposed, permanent industrial complex.

*Detailed plans will be provided prior to closure as required by the permit. See response to comment 11.*

**Marshall Magruder, Concerned Citizen-**

Comment 155:

The commenter states that the March 3, 2009, DRAFT APP, first should be rejected as it is marked "DRAFT" and, secondly, it should be resubmitted after (a) ADEQ has reviewed public comments AND, (b) as a minimum, the Final EIS has been reviewed and approved by a Record of Decision (ROD) by the US Forest Service, Bureau of Land Management and the US Army Corps of Engineers.

*All of the application documents submitted in support of the APP application have been evaluated by ADEQ and determined to meet the program requirements. All of these documents are available for public review as part of the Rosemont APP application file. See response to comment 9.*

Comment 156:

The commenter suggests that the APP be revised to state "This permit becomes effective after the Records of Decision from the Coronado National Forest and US Army Corps of Engineers and the Coronado Forest Management Plan updates approving the Rosemont Copper project have been approved and effective on the subsequent date.

*See response to previous comment and comment 9.*

Comment 157:

The commenter requested the final APP state which DRAFT EIS Alternative has been used for the plan or all six DRAFT EIS Alternatives be included in the proposed APP Application.”

*See response to comment 86.*

Comment 158:

The commenter reasserts that the permit should become effective after the Records of Decision from the Coronado National Forest and US Army Corps of Engineers and the Coronado Forest Management Plan updates approving the Rosemont Copper project have been approved and effective on the subsequent date.

*See response to comment 9.*

Comment 159:

The commenter requests that the ADEQ Director’s signature be added to the permit authorization on page 1 of the APP.

*The ADEQ Water Quality Division Director is authorized to sign all Individual Aquifer Protection Permits.*

Comment 160:

The commenter recommends adding the words “during closure and post-closure” to the second sentence of second paragraph on page one, after “The permittee shall construct, operate, and maintain the permitted facilities:”

*Upon issuance of the APP, the permittee is required to comply with all permit conditions until a permit release is issued to Rosemont.*

Comment 161:

The commenter recommends that Rosemont withdraw this application and resubmit with the following minimum information:

1. List all of the known pollutants to be used or created by mining operations during the life of this mine.
2. Determine the quantities of each pollutant to be used or created during mining operations during the life of this mine.
3. Show where each pollutant will (be) introduced into the facility.
4. Show it will “flow” or be moved through mining operations and be transformed into different pollutants.
5. Show where each pollutant will be discharged or left in the facility.
6. For each pollutant, determine how it can be eliminated in the mining process, and if that is not possible, then the specific mitigation plan to reduce its hazard or toxicity level.
7. For each resultant pollutant, determine which of the nine proposed facilities, and when it will be deposited or remain.

8. Upon completion of these steps, resubmit another APP with details lacking in this present outline for an APP.

*The application documents submitted by Rosemont have been determined to be sufficient for ADEQ to make a decision in regards to the APP. All of the application documents have been determined to meet the requirements of A.R.S. §49-241 through §49-244, and A.A.C. R18-9-A201 through A209.*

Comment 162:

The commenter suggests that gold and silver will also be produced at Rosemont, and that Section 2.1 of the APP be revised to include language about the processing of those elements, and add any additional facilities associated with silver and gold recovery.

*At this time, there are no facilities being permitted associated with additional recovery processes. Any additional discharging facilities would require a significant amendment to the current APP as drafted.*

Comment 163:

The commenter requests that an MSDS be provided for the composition of the tailings slurry.

*Rosemont has submitted a Tailings Characterization Report as part of the APP application which is available for public review.*

Comment 164:

The commenter stated that ADEQ determine the composition and amount of this (Copper-Moly flotation circuit) slurry that will be in the Dry Stack Tailings Facility annually during the production, closure and post-closure periods.

*The Department is unclear as to what was intended by this comment and how it is relevant to the APP. The Mine Plan of Operations, and Dry Stack Tailings Storage Facility Design Report contain a discussion of tailings volume.*

Comment 165:

In reference to the Primary Settling Basin-

The commenter asked what is the composition of the "process materials"? How much material "settles"? Where does the "process material" that "settles" go?

*The Primary Settling Basin will be used to temporarily store tailings during process upset conditions. See Section 2.1.2 of the permit for description and function of the Primary Settling Basin.*

Comment 166:

The commenter asked which Draft EIS Alternative was used for determining the size of the PSB? Include the changes in the PSB for each Draft EIS Alternative?

*The BADCT demonstration for this APP is evaluated strictly based on the application documents submitted to ADEQ.*

Comment 167:

The commenter asked what is the anticipated evaporation rate for this basin (PSB)?

Include the changes due to evaporation and concentrations impacts based on the 14-hour summer and 10-hour of winter sunshine seasons in this area

*A water balance was provided in the Rosemont APP application documents, and is available for public review.*

Comment 168:

The commenter stated that Rosemont “does NOT have the financial capability...”

*See responses to comments 12 and 24 regarding financial assurance.*

Comment 169:

The commenter questions the financial mechanism.

*See response to comment 12.*

Comment 170:

Closure/post-closure cost estimates-

The commenter stated that ADEQ should change \$2,744,100 to read as \$200,000,000 and \$1,549,035 to read as \$100,000,000.

*The closure/post closure cost estimates have been determined to be adequate in accordance with A.A.C. R18-9-A201(B)(5).*

Comment 171:

The commenter requested that ADEQ add specifications to define the subgrade preparation and testing process so that when the APP is approved, they shall be so included.

*Subgrade preparation and testing for the PSB have been included in the document titled “Process Water Pond, Temporary Storage Pond, and Settling Basin Design Report”, prepared by M3 Consultants, and dated May 2009. The APP does not normally list this type of detail. Subgrade preparation has been covered in the above referenced document and will be required per BADCT guidance.*

Comment 172:

The commenter requested that ADEQ add specifications to define the liner installation and testing process so that when the APP is approved, they shall be so included.

*Liner installation and testing for the PSB have been included in the document titled "Process Water Pond, Temporary Storage Pond, and Settling Basin Design Report", prepared by M3 Consultants, and dated May 2009. Although BADCT has not been established for settling basins, a quality assurance/quality control (QA/QC) program for liner installation/testing, operation, and maintenance will be required per BADCT guidance. The QA/QC program will be part of the General Construction QA/QC Plan.*

Comment 173:

The commenter requested that ADEQ add specifications to define the underdrain system installation and testing process so that when the APP is approved, they shall be so included.

*There are no drains below the PSB. Information about the Flow-Through Drain System installation/testing has been commented on as found in Comment 101 and 102.*

**Katherine Arnold, Rosemont Copper Company-**

Comment 174-

Commenter requested that facility latitudes and longitudes in Tables 2.1, 4.1.1, and 7.4.1 be corrected based on the most recent facility descriptions provided to ADEQ.

*These corrections have been made.*

Comment 175-

Commenter requested that in Section 2.1.8, a statement be added that large mining tires may be buried in the Waste Rock Storage Area, consistent with ADEQ rules.

*Requirements for burial of mining waste tires are found at R18-13-1202. ADEQ believes it is unnecessary to include this language in the APP.*

Comment 176-

Commenter requested that Section 2.1.19, indicate the approved waste footprint is 1.85 acres.

*This change has been incorporated into the draft permit.*

Comment 177-

Commenter requested that a section heading (Section 2.1.10) be added to separate the facility list from details on the NMSWLF and an additional heading be added to clarify annual fees associated with groundwater protection and annual fees/disposal fees for the NMSWLF. Commenter requested that some language be deleted in this section that is repeated in Section 7.4.

*ADEQ believes the language is sufficiently clear as written and has not incorporated these changes.*

Comment 178-

Commenter requested that Section 2.2.4 be rearranged for clarity, some repeating language be deleted, and the paragraph immediately before Table 2.2 be placed immediately following the table with some additional clarification added, such as spelling out SMRF, AL, and DL.

*The footnote for Table 2.2 has been revised to read as follows:*

The Alert Level 1 (AL1) or Alert Level 2 (AL2) is exceeded when the amount of leakage pumped from the sump for the pond is greater than the applicable quantity below. Contingency requirements of Sections 2.6.2.4 and 2.6.2.5 shall be followed for AL1 and AL2 exceedances, respectively. An exceedance of AL 1 or AL2 is not a violation of the permit unless the permittee fails to perform as required under Section 2.6.2.

Comment 179-

Commenter requested that Section 2.2.4.1 (Concurrent Reclamation of Dry Stack Tailings Facility) be moved after Table 2.2 and the paragraphs discussing liner damage.

*This change has been incorporated into the draft permit.*

Comment 180-

Commenter requested that the footnote reference for "Liner failure in a single-lined impoundment is any condition that would result in a leakage exceeding 550 gallons per day per acre" be removed from Table 2.2 and added to the paragraph in Section 2.3, since that section is where the phrase "liner failure" is first used.

*This change has been incorporated into the draft permit.*

Comment 181-

Commenter requested that in Section 2.3, the phrase "or other unauthorized discharges" be deleted at the end of the first sentence. As currently worded, the language states that Rosemont shall operate the permitted facilities "to prevent unauthorized discharges" resulting from a long list of causes, the last of which is "other unauthorized discharges." The language as written prohibits discharges caused by discharges. This is circular, unnecessary and confusing. The last clause should be deleted.

*The language has not been deleted. The APP only allows discharges to the permitted facilities that are operated for their intended purpose.*

Comment 182-

Commenter requested that the POC well latitudes and longitudes be corrected in Table 2.3 and the table summarizing the POC well locations be renamed from Table 2.4 to Table 2.3 for clarity (table numbering out of sequence).

*This correction has been made to the draft permit.*

Comment 183-

Commenter requested that in Sections 2.6.2.4 and 2.6.2.5, several references be added to planned activities (as well as those already conducted) in the event of an AL1 or AL2 exceedance.

*These revisions have been incorporated into the draft permit.*

Comment 184-

Commenter requested that in Section 2.6.2.5, the phrase “to the extent practicable” be added before the requirement to immediately cease all discharges to an impoundment in the event of an AL2 exceedance. It may not be feasible to immediately cease discharges to a particular impoundment.

*This language has been included in Section 2.6.2.5.*

Comment 185-

Commenter requested that in Section 2.6.4, item 4 be removed which states “The permittee shall notify any downstream or downgradient users who may be directly affected by the discharge.”

*This language has not been removed.*

Comment 186-

Commenter requested addition of a new item 4 in Section 2.6.4 to state: “The increased monitoring required as a result of an AQL exceedance may be reduced to the regular frequency, if the results of three (3) sequential sampling events demonstrate that the parameter does not exceed the AQL.”

*This language has not been added to the draft permit. AQL exceedances shall be investigated and reported in accordance with Sections 2.6.5 and 2.7.3 of the APP. The permittee may request a return to regularly scheduled groundwater monitoring if site/situation specific conditions warrant.*

Comment 187-

Commenter stated that Section 2.6.5 (Emergency Response and Contingency Requirements) should be limited to discharges not specifically addressed in the preceding Sections 2.6.1 through 2.6.4. Those earlier sections contain specific requirements for notification, reporting and corrective action for specific incidents. It is very confusing to also have separate, more general contingency section in the same permit that could apply to the same type of incident addressed more specifically elsewhere in the permit. Instead, this section should apply only to unanticipated discharges not specifically addressed elsewhere in the permit.

*The permit language has not been changed. Section 2.6.5 applies to discharges not specifically addressed elsewhere in the contingency requirements.*

Comment 188-

Commenter stated that Section 2.7.3 (Permit Violation and Alert Level Status Reporting) should not apply to specific situations where detailed contingency measures are outlined in Section 2.6. This can again create confusion. For example, in the case of overtopping of a surface impoundment (Section 2.6.3.2), the permit requires 24-hour notification to ADEQ (Compliance Section, Enforcement Unit) and submission of a written report within 30 days. Section 2.7.3, if applicable, would require a 5-day written report to the Compliance Section. This is both confusing and unnecessary. As with Section 2.6.5, we believe this section should apply only to unanticipated discharges not specifically addressed elsewhere in the permit. (Note – Rosemont has no objection to specific contingency measures in Section 2.6 cross-referencing Part 2.7.3(2) in terms of specifying the contents of written reports required by those sections).

*The permit language has not been changed. Section 2.7.3 applies to discharges not specifically addressed elsewhere in the contingency requirements.*

Comment 189-

Commenter requested that Section 3.0, include language stating that the amendment to add calculated ALs and AQLs would constitute a minor amendment unless a method other than that specified in the permit is used to derive the ALs and AQLs.

*This language has not been added to the draft permit. Upon receipt of an application, ADEQ shall determine what type of amendment this submission constitutes in accordance with the rule.*

Comment 190-

Commenter requested minor edits to the facility design information in Table 4.1.1 to correct errors and/or make that section consistent with other facility descriptions. Commenter also requested that “external side slope” descriptions in the Table be removed.

*Some minor edits were incorporated into language in Table 4.1.1 for consistency. The “external side slope” descriptions in the BADCT table were not removed, because the commenter did not provide justification for why this language should be removed.*

Comment 191-

Commenter requested that in Tables 4.1.1 and 7.4.1, specifications related to the landfill cover be corrected.

*These revisions have been incorporated into the draft permit.*

Comment 192-

Commenter requested that the latitudes and longitudes of the generally permitted facilities be corrected in Table 4.1.1.

*These revisions have been incorporated into the permit.*

Comment 193-

Commenter requested that in Table 4.2.1, Process Ponds, the reference to a weekly “visual inspections of the LCRS pump and liquid level in the sump” be changed to “inspect the LCRS pump system for proper functioning”. A visual inspection of the pump and liquid level is not practical since the sump is located between the liners in a double-lined pond. Table 2.2 also stipulates a daily visual monitoring of the LCRS, i.e. recording liquid pumped and assessment/compliance with action leakage rates. A change to weekly was requested unless liquid is present.

*The change to “inspect the LCRS pump system to proper functioning” has been incorporated into the draft permit. The frequency shall remain daily.*

Comment 194-

Commenter requested that in Table 4.2.1, Process Ponds, Other, the reference to “inspection of the Heap Leach Pad” be changed to the “inspection of the ponds”. The commenter also requested changing the requirement to remove accumulated fluids from the Primary Settling Basin from “45 days” to “60 days”.

*This change to “inspection of the ponds” has been incorporated into the draft permit. The requirement to remove accumulated fluids from the Primary Settling Basin remains 45 days because the commenter did not provide justification for the change.*

Comment 195-

Commenter requested changes in Tables 4.2.1 and 7.4.2, language on storm/rain events for consistency. Commenter requested references to a “major storm event” or a “significant rain event” be changed to “significant rainfall” with the definition as stated in Table 7.4.2 (0.5 inches of rainfall in a 24-hour period).

*For consistency, this change has been incorporated into the draft permit.*

Comment 196-

Commenter requested that in Table 4.2.1, Other Ponds, Other, the language “A complete inspection (as-built design, materials, etc.) shall be made at the time of construction.” be changed to “A complete inspection (testing, materials, etc.) shall be made at the time of construction.” As-built designs are prepared post-construction.

*This revision has been incorporated into the draft permit.*

Comment 197-

Commenter requested changes to the headings for Tables 4.2.3 and 4.2.4 for consistency.

*The headings for the tables shall read Quarterly (Table 4.2.3) or Biennial (Table 4.2.4) Compliance Groundwater Monitoring.*

Comment 198-

Commenter stated that the language provided in Section 2.3 in relation to storms in excess of the 100-year, 24-hour event, and power outages, should also be applicable to freeboard requirements and was added to Table 4.2.5.

*This revision has not been included in the draft permit. The language is already included in Section 2.3.*

Comment 199-

As noted above in Tables 4.1.1 and 7.4.1, specifications related to the landfill cover were corrected.

*These corrections have been included in the APP.*

Comment 200-

In Tables 4.2.1 and 7.4.2, language on storm/rain events was made consistent. References to a major storm event or a significant rain event were changed to "significant rainfall" with the definition as stated in Table 7.4.2 (0.5 inches of rainfall in a 24-hour period).

*For consistency, this language has been revised to read "significant rainfall events", with a reference to the 0.5 inches of rainfall in a 24-hour event.*

Comment 201-

Rosemont maintains its stance that conditions for the proposed NMSWLF that are unrelated to groundwater protection (e.g., methane monitoring requirements) cannot be included in the APP under A.R.S. §49-243(k), and cannot be made subject to enforcement under the APP enforcement statutes rather than the solid waste enforcement statutes. These positions were articulated in correspondence dated December 13, 2011, and in an email from David Krizek to Jerry Smit dated November 22, 2011, which communications are incorporated by reference in these comments. ADEQ has never articulated the legal basis for its current position, beyond citing a general statute encouraging the agency to avoid dual permitting where practicable. Rosemont agrees that it is subject to 40 C.F.R. Part 257 requirements, but does not agree that permit conditions based on Part 257 that are not related to groundwater protection can lawfully be included in the APP. Notwithstanding this objection, Rosemont intends to fully comply with all terms of the final issued permit related to the NMSWLF.

*The comment is noted, however the NMSWLF requirements shall remain in the APP. Rosemont has the option of removing the NMSWLF from the APP and permitting it separately under the solid waste program.*

**C. ORAL COMMENTS**

***Oral comments received on the official record were received during the Public Hearing held on January 5, 2012 at Palo Verde Magnet High School. Several Commenters expressed approval for the mine, including Joe Cesare, James Conser, Larry Fordahl, Rebecca Spann, Tory Robinson, Robert Metz, Rick Grinnell, Shelly Hawkins, Anna***

*Sanchez-Navarro, Kyle Randels, Hans Von Michaelis, Kieth van Heyningen, Tom Jones, Diane Archer, Donald Spann, Johnnie Ouzts, Deborah Beggy, Mike Verbout, Tim Finman, Chris Mooney, David Briggs, Rich Hillman, Craig Hunt, Scott Larsen, Timothy Cady, and Dan James. For the record their approval is noted here but is not reproduced below.*

**Pete Inks, Concerned Citizen-**

**Comment 202:**

The commenter states that Rosemont has met or exceeded applicable Arizona laws and that the APP should be granted to Rosemont.

*The comment has been noted.*

**Dona LaSchiava, Concerned Citizen-**

**Comment 203:**

The commentator expressed concern that the APP would allow Rosemont to contaminate our drinking water for three and a half to four years, that there are not discharge limits in the permit and that these discharge limits should be set to zero, and that the BADCT demonstration is useless without setting discharge limits.

*See responses to comments 5, 15 and 16.*

**Steve McCoy, Concerned Citizen-**

**Comment 204:**

The commenter expresses concern about what will happen to the mining operation once copper prices decline, and that the financial assurance amount is too low.

*See response to comment 12.*

**Elsie Wattson Lamb, Concerned Citizen-**

**Comment 205:**

I was quite shocked when I learned that Rosemont was going to be able to operate for at least two years of putting pollutants into the earth before there was a clear limit on discharge set, and that they were going to be able to monitor themselves, and that there's no strong oversight of what might be going into the earth.

*See responses to comments 5, 15 and 22. The groundwater and operational monitoring requirements of the APP are intended to provide protection of public health and the environment.*

**John Cesar, Concerned Citizen-**

**Comment 206:**

The commenter stated that ADEQ has reviewed Rosemont's APP application and determined that it meets the requirements necessary for issuing the APP.

*The comment is noted.*

**Elizabeth Webb, Concerned Citizen-**

**Comment 207:**

The commenter submitted 8 photographs of drill rigs around the project area and wanted to know which POC wells these are. Commenter indicated that the Forest Service told her "They're drilling APP wells".

*The photographs are not of POC wells being installed for the APP. They may be exploration borings, but this can not be verified except through Rosemont.*

**Stephen Brittle, Don't Waste Arizona**

**Comment 208:**

You cannot issue a permit that has no limits, reserved is not a limit. And that is a violation of the Public Trust Doctrine.

*See responses to comments 5, 15 and 22.*

**Comment 209:**

The commenter states that A.R.S. §49-241 requires a permit before discharges can be made. Well, if there aren't going to be any, then why is there a permit being let. There should be either zero discharge allowed, or there could be a minimum set at the same used as the other mines, but instead you have carte blanche.

*See responses to comments 5, 15 and 22.*

**Comment 210:**

The commenter stated that reserved is not a discharge limit. Reserved doesn't mean anything.

*See response to comment 22.*

**Jeanne Broome, Concerned Citizen-**

**Comment 211:**

The commenter stated that the permit, at least in theory, requires that the applicant meet the Aquifer Water Quality Standards, that is Drinking Water Standards, that's what our standard is. And yet, the APP would allow Rosemont to contaminate our drinking water before the company, Rosemont, recommends a discharge limit for the dangerous pollutants.

*Please see the response to comment 5.*

**Marshall Magruder, Concerned Citizen-**

**Comment 212:**

The commenter asked what are the toxic and hazardous materials involved in this permit? Where are the MSDS that should be in this permit, because that's how you describe hazardous and toxic materials?

*MSDS and possible exposure characteristics of specific substances are regulated under the Occupational Safety and Health Administration (OSHA), and not regulated under the authority of the APP Program.*

How much of each of these toxic and hazardous materials are going to be used in terms of gallons?

*See Section 2.1 and Table 4.1.1 of the permit for facility descriptions.*

What are the safety limits for each toxic and hazardous material involved in this entire project? There are safety limits. They're not in the permit.

*Safety limits, such as Permissible Exposure Levels, are not subject to the rules of the Aquifer Protection Permit. It is unclear what specific safety limits the commenter may be referring to in this comment. With regard to APP, limitations to discharge to the aquifer are set through Aquifer Quality Limits (AQLs). Please see response to comment 15 for a discussion of the statutes that require these discharge limits.*

What are the standards that have to be met? Who are the testing agencies? What are the qualifications of the testing agencies that the company will use?

*The standards that must be met are provided by statute at A.R.S. §49-243(B)(2), "That Pollutants discharged shall in no event cause or contribute to a violation of aquifer water quality standards at the applicable point of compliance." As required by the permit, all laboratories providing analytical data must be licensed by the Arizona Department of Health Services.*

Where will each of these hazardous and toxic materials go in each pit, because they're going to go from one to the other? What's the flow diagram look like?

*See Section 2.1 and Table 4.1.1 of the permit for facility descriptions. All facility design documentation is part of the Rosemont APP application, and is available for public review.*

**Comment 213:**

The commenter questions the adequacy of the financial assurance mechanism.

*See responses to comments 12.*

**Peter Hughes, Concerned Citizen-**

**Comment 214:**

The commenter expressed concern about the perceived adverse effect that the Rosemont Project would have on tourism in the area.

*The comment is noted, however it is outside the scope of the Aquifer Protection Permit Program, which solely addresses groundwater quality. Impacts on tourism are addressed under the Forest Service EIS.*

**Sandy Whitehouse, Concerned Citizen-**

**Comment 215:**

The commenter stated that it says in the Draft EIS that seepage from the tailings would cause an exceedence of cadmium, nickel, and selenium into the groundwater.

*The executive summary for the Draft EIS says the following for the proposed action:*

**Groundwater Quality**

Under the proposed action, seepage is expected to occur from the dry-stack tailings facility from remnant process water. Infiltration of precipitation could cause seepage from the waste rock facility. Both these sources could impact groundwater quality; however, modeling indicates that the water quality of potential seepage from these facilities would meet all Arizona Aquifer Water Quality Standards.

Following closure of the heap leach facility, seepage is expected to continue at low flow rates for 115 years. Modeling indicates that remnant heap leach seepage would exceed numeric aquifer water quality standards for cadmium, nickel, and selenium. This seepage would be collected and treated. Conceptually, modeling shows that with treatment, heap leach seepage can meet all numeric aquifer water quality standards. Long-term discharge from the heap leach facility requires permitting under the Arizona Aquifer Protection Permit program; the specific techniques for collection and treatment of the long-term discharge would be determined by the Arizona Department of Environmental Quality. The heap leach facility is located and designed to collect all possible drainage and solution, is on top of a stable rock location, and will be encapsulated by waste rock to protect from stormwater infiltration.

As modeled, mine pit lake water quality would not exceed any Arizona Aquifer Water Quality Standards.

**Randy Serraglio, Concerned Citizen-**

**Comment 216:**

The commenter asked how can you demonstrate that you're going to meet AWQS if there's no limits?.

*See response to comment 5.*

**Comment 217:**

The commenter stated if you look at the Environmental Impact Statement and the Mine Plan of Operations that Rosemont Copper has submitted to the Coronado National Forest, you'll see that there's huge problems with it. And it's not at all clear what their operation is going to look like.

*See response to comment 9.*

Comment 218:

Commenter expressed concerns regarding BADCT, Dry Stack Tailings, financial capability, and technical capability.

*See responses to comments 20 regarding BADCT, 15 regarding Dry Stack Tailings, 12 and 24 regarding financial assurance and the financial capability demonstration and comment 35 regarding technical capability.*

**Duane Durham, Concerned Citizen-**

Comment 219:

Mr. Durham expressed concern over possible adverse effects on his well from the Rosemont Operation.

*Any discharge contributing to an AQL exceedance constitutes a potential violation of this permit, subject to corrective action.*

**Ginny Durham, Concerned Citizen-**

Comment 220:

The commenter questioned that they don't have limits set for the amount of pollutants that the mine is putting into the ground. Giving them four years to pollute the stuff, and then deciding they might set a limit doesn't seem like a wise way to do it.

*See response to comment 5.*

**Dick Nelson, Concerned Citizen-**

Comment 221:

Commented that he would like the APP to contain language that Rosemont would accept (financial) responsibility "Not the taxpayers of Arizona", to mitigate the effects of pollution discharged due to storm events in excess of the 100-year/24-hour storm event.

*See responses to comments 41, 45, 53, and 59.*

**John Kozma, Concerned Citizen-**

Comment 222:

Questions how the leakage rates were calculated in Table 2.2, and why there is such a difference in the numbers for AL1 and AL2.

*The AL1 leakage rate is used to evaluate liner performance, using a process solution pond as an example, under typical operating conditions. The AL1, as measured by the amount of fluid pumped by the pond's leak collection and removal system (LCRS), is a low-level trigger that may indicate the presence of a small hole or defect in the top geomembrane of a double-lined process solution pond. The AL2 leakage rate, as measured by the amount of fluid pumped by the pond's LCRS, is a high-level trigger that indicates a serious malfunction of the liner system. The leakage rates are calculated using Bernoulli's equation for free flow through an opening. The calculations are dependent on the area of the hole, maximum hydraulic head on the liner, liner surface*

area, liner design, and etc. Thus the alert levels AL1 and AL2 are different because they indicate different numbers based on the representative discharge amounts; minor volume (AL1) versus larger volume (AL2).

Comment 223:

The commenter asked ADEQ why the AWQS are not used to set maximum levels in Table 4.2.3?

*In general, ambient water quality conditions are below the numeric AWQS, and Alert Levels for groundwater monitoring are set at levels less than the AWQSs. However, on occasion, ambient groundwater has constituents in concentrations that are above AWQSs. The criteria for issuing an APP according to A.R.S. §49-243 is that pollutants discharged shall not cause or contribute to a violation of AWQS at the applicable point of compliance, or that no pollutants discharged shall further degrade at the applicable point of compliance the quality of any aquifer that at the time of issuance of the permit violates the aquifer water quality standard for that pollutant, depending on what is found during the ambient monitoring period. Upon completion of ambient monitoring period, alert levels and aquifer quality limits shall be inserted into the monitoring tables.*

Comment 224:

The commenter states there are seven other chemical elements which have maximum APP levels, but those are only required to be tested every two years. I personally think that would be considered loose or too lax, or at least the ADEQ should provide in this permit reasons why they have chosen to defer those other seven elements every two years.

*Based upon discharge characterization data, these constituents are not expected to be present in potential discharges from the mining operation. In addition, groundwater modeling indicates substantial travel times for pollutants in the area of the facilities, making biennial monitoring acceptable. APPs for mining operations commonly contain an extended list of constituents for biennial sampling, with a shortened list of more critical constituents and indicator parameters for more frequent monitoring.*

**Robert Harris, Concerned Citizen-**

Comment 225:

The commenter states ADEQ is monitoring quality only, not quantity. Who does monitor the quantity? ADEQ has got the quality, who's got the quantity? I thought ADEQ operated under the authority of the EPA, under Section 25, and it's supposed to enforce all the Federal EPA regulations. Does this proposed permit do that? ADWR has no control over the amount of the water that's used because Rosemont is not in the AMA. They just kind of stand there and say, sorry, you can't control us because we're not in the AMA.

*The Aquifer Protection Permit Program is tasked with protecting groundwater quality. The program does not regulate water quantity. The program was authorized through*

*Arizona statutes. It is not a delegated program from EPA, nor does it derive from any EPA program.*

**Nancy Freeman, Groundwater Awareness League-**

**Comment 226:**

The commenter states the ADEQ bond must assure clean water after closeout. And major costs shall be continual cleaning of groundwater and storm water after operations.

*See response to comment 12.*

**Comment 227:**

The commenter states that there must be adequate liners on all the tailings and leaching facilities.

*See response to comment 59.*

**Comment 228:**

The commenter states that the Bagdad Mine had a plethora of surface- of sulfuric acid spills because it was trucked over hilly terrain. And, also, there are problems with sulfuric acid spills. We've had them regularly at Sierrita.

*Spills of contaminants or hazardous materials are not regulated by APP. See permit section 2.6.5. Chemical constituents used in processing at the mine are not regulated by the APP program unless they are related to APP regulated discharging facilities (i.e. – impoundments or stockpiles).*

**Comment 229:**

The commenter questions the financial stability of Augusta Resources and states the financial assurance mechanism “must be in Certificates of Deposit, as required in New Mexico.”

*See responses to comments 12 and 24, as well as appropriate sections of the draft permit and factsheet regarding financial demonstration. The financial assurance requirements of the APP Program are not the same as the requirements of the State of New Mexico.*

**Roger Featherstone, Arizona Mining Reform Coalition-**

**Comment 230:**

The commenter states the draft would allow Augusta to pollute for years before they- the company themselves recommends the limits.

*See responses to comments 5 and 22.*

**Comment 231:**

The commenter states that a closure plan should be written right up front, and this doesn't hit the mark.

*See response to comment 11.*

Comment 232:

The commenter states that the reclamation bond is pitiful.

*See response to comment 12.*

**Gayle Hartman, Save the Scenic Santa Ritas-**

Comment 233:

The commenter states the no discharge limit for dangerous pollutants is required.

*See response to comment 22.*

Comment 234:

The commenter also states that in addition, it seems to be in direct violation of Arizona law that states that ADEQ cannot issue a permit unless the applicant demonstrates that there shall be no violation of Aquifer Quality Standards.

*See response to comment 15.*

**Carol Shinsky, Concerned Citizen-**

Comment 235:

The analysis and modeling that has been done is all based on historical 100-year/24-hour storm events. I think this is entirely inadequate in view of our changing climate. Worldwide extreme storm events have become more frequent and more extreme.

*See response to comments 41 and 59.*

Comment 236:

The factsheet states that the permittee is required to maintain technical capability throughout the life of the facility. Why would this be acceptable since we know that groundwater contamination will continue long after the project ends?

*The purpose of the Aquifer Protection Permit is to ensure discharges do not cause an exceedance of AWQS at the applicable point of compliance for the facility. ADEQ believes that the BADCT designs submitted by Rosemont in their application comply with requirements to minimize discharges to the greatest extent practicable. In addition, through monitoring of Point of Compliance wells, ADEQ will know if the BADCT for any of these facilities has failed. If this happens, Rosemont will be required to take corrective action to correct any and all violations of Aquifer Quality Limits (AQLs).*

**Morris Farr, Concerned Citizen-**

Comment 237:

The most obvious problem is that Rosemont is asking ADEQ for a permit right now for a facility whose future is at best uncertain, and whose final design is still literally on the drawing boards of other public agencies.

*See response to comment 9.*

Comment 238:

Given the importance of this project for public health and safety, how can ADEQ possibly grant a permit to a company that has never in its history even attempted to construct and operate a huge and complex project like this proposed mine?

*See response to comment 35.*

**Mary Garcia, Tohono O'Odham Nation-**

Comment 239:

The commenter spoke about cancer deaths that have occurred on the reservation and relatives that were miners "from all the four copper mines that border us".

*The comment is noted. ADEQ does not have information of the health effects from occupational exposures at historic mining operations. Occupational exposures to mine employees are regulated by the U.S. Dept. of Labor's Occupational Safety and Health Administration.*

**Diane Raw, Concerned Citizen-**

Comment 240:

Commenter opposes the mine.

*Comment is noted. ADEQ notes that no specific concerns regarding the proposed APP were given.*

**Dick Basye, Concerned Citizen-**

Comment 241:

Commenter opposes the mine.

*See response to previous comment.*

