ROSEMONT COPPER
A Bridge to a Sustainable Future.

October 8, 2010

Ursula Kramer, P.E.
Control Officer and Director
Pima County Department of Environmental Quality
33 N. Stone Avenue, Suite 700
Tucson, AZ 85701-1317

Re: Air Quality Permit Application, Permit No. 6112
Rosemont Copper Project

Dear Ms. Kramer:

This letter responds to your letter dated September 23, 2010, in which you deemed Rosemont Copper Mining's Class II air quality permit application for the proposed Rosemont Copper Project incomplete. Rosemont Copper Company ("Rosemont") staff and consultants met with Mr. Richard Grimaldi, Mukonde Chama and Rupesh Patel of your staff on October 1, 2010, together with Ms. Leslie Lukach of the Pima County Attorney's office, to discuss the information and gain additional insight on what information is needed. We appreciate their availability to meet with us.

This letter summarizes briefly the information that you requested. Additional information on Parts II through VI of the information request are found in the attached supplemental information from our air consultant, Applied Environmental Consultants. In addition, we noted one minor correction to the initial application and addressed it in the attached supplement.

Each information request is presented in *italics*, followed by Rosemont's response.

<u>Necessary Additional Information I</u>

Pima County Department of Environmental Quality (PDEQ) issues permits based upon sufficient evidence that the source will be designed and controlled such that it may be expected to operate in compliance with all applicable requirements. This ensures that the final permit incorporates any and all enforceable emission limitations and standards, including operational requirements and limitations that assure compliance at the time of permit issuance. PDEQ understands that part of the proposed mine operations will be located on federal lands and that Rosemont Copper Mine (RCM) is undergoing an evaluation process required by the National Environmental Policy Act (NEPA). As part of that process, an Environmental Impact Statement (EIS) is required for the evaluation of the RCM mine proposal and will include other alternatives. The RCM air quality permit application omitted information pertaining to the NEPA process. To determine

then relationship between the NEPA process and the RCM air quality permit application, RCM must:

A. *Identify which parts of the proposed RCM mine will be on private and federal lands;*
B. *Discuss the NEPA process including the EIS and the Record of Decision to be issued by the U.S. Forest Service with respect to those alternatives being considered. Discuss the impact these alternatives will have on the design and configuration of the proposed mine including what effect each alternative will have on mine operations, maximum capacities and location of the mine tailings;*
C. *Discuss the relationship between the alternatives being considered by the U.S. Forest Service as well as the applicability and compliance with all applicable air quality requirements; and*
D. *Discuss and include in the application any proposed mitigation measures that were provided to the U.S. Forest Service that were based upon air quality modeling completed by the applicant. Provide the air quality modeling and results.*

Response from Rosemont

Rosemont was surprised to learn, during its meeting with PDEQ staff on October 1, 2010, that PDEQ's staff had not been included in the County's "Cooperating Agency" relationship with the NEPA process. The invitation from the Forest Service, as the lead agency in the NEPA process, was directed to Pima County so that its employee's with *regulatory responsibility* for air quality would be fully up to speed on developments and so that the process could "include information in the environmental documents and record needed by your agency to discharge your regulatory and compliance responsibilities under law, regulation, and policy." We regret that PDEQ staff has not been able to participate nor, apparently, have been fully briefed by County staff that attend those meetings. Participation in the "Cooperating Agency" process would have answered these questions.

Rosemont has attached, as Appendix 2 of this letter, a presetation of the alternatives found on the rosemonteis.us website that appears to have been presented to the Cooperating Agencies in a meeting on July 15, 2010. The appendix should provide a good idea of the basic alternatives under consideration. Facts that may not be apparent from reading the appendix, but which are critical to the air permitting process include:

- Under any of the alternatives (except "No Action"), all stationary sources that are the subject of RCM's application remain in the same location. It is the position of the Forest Service that the "No Action" alternative cannot be selected under the Mining Law but instead is used for baseline comparisons.

- Upon approval of its proposed Mine Plan of Operations ("MPO"), RCM has full authority to occupy the area, including federal lands, for purposes as set forth in the MPO.
- While it is possible that the location of the tailings, some haul roads and possibly one conveyor system will vary slightly with the alternatives, this should affect only fugitive dust sources (or, in the one case, several conveyor drop points). In all cases, RCM has maintained a minimum of 500 or more feet from the tailings, any haul road, or the conveyor system to the edge of its fenced area. Thus, a substantial buffer zone exists all around the mine to ensure that fugitive dust does not cross the MPO line, which is the "worst case" (e.g., closest to operating areas) "property line" that could be used for purposes for the Pima County standards. Depending upon the final agreements between RCM and the U.S. Forest Service and other agencies, the actual "property line" (e.g., area of Rosemont operational control) may be further away.
- Rosemont's operations are thus significantly further away from the property boundary than is the case for several other mining operations that PDEQ has historically permitted and should present no impediment to permitting, particularly given Rosemont's commitments in its application to use state of the art fugitive dust controls.

Rosemont will provide answers to your specific questions that related to the NEPA process and then explain why the NEPA process does not affect PDEQ's obligations in issuing the requested air quality permit.

A. *Identify which parts of the proposed RCM mine will be on private and federal lands;*

Rosemont has attached as Appendix 3 the EIS "boundary map" showing the land ownership and administrative land control authorities over its proposed project area. Rosemont will have full operational control over areas within the project boundary. Accordingly, underlying land ownership should not affect permit requirements or permit processing.

B. *Discuss the NEPA process including the EIS and the Record of Decision to be issued by the U.S. Forest Service with respect to those alternatives being considered. Discuss the impact these alternatives will have on the design and configuration of the proposed mine including what effect each alternative will have on mine operations, maximum capacities and location of the mine tailings;*

Rosemont has requested approval of a Mine Plan of Operations (MPO). The MPO sets forth the desired configuration of the Rosemont Copper Project that is the basis for the request for an air quality permit. All stationary sources, over which PDEQ has jurisdiction, are located identically in all alternatives (except the "no action" alternative). Therefore, emissions from the stationary sources are unaffected by the alternatives under consideration. Mobile sources may be affected by changes in the alternatives, but crank case emissions from mobile sources are not subject to

PDEQ's jurisdiction and therefore are irrelevant to PDEQ's consideration of the permit application. While fugitive dust sources would vary with the alternatives, Rosemont has provided for a 500 foot minimum separation between fugitive dust sources and the project boundary, far greater than exists for many other sources that PDEQ has routinely permitted. In any event, fugitive dust sources remain subject to the same requirements regardless of location on federal, state or private land. Rosemont has fully addressed compliance with the requirements in its application. Finally, because Rosemont is a Class II source, it is not subject to modeling under PDEQ regulations, so the slight changes in fugitive source location do not render any required modeling demonstration incomplete because modeling is not required. In short, the proposed alternatives will not affect the permit process or the final requirements or conditions of the permit.

C. *Discuss the relationship between the alternatives being considered by the U.S. Forest Service as well as the applicability and compliance with all applicable air quality requirements; and*

See the general response to comment I, Appendix 2, and the response to comment I.B. There is no change in applicability. Compliance with all applicable air quality requirements is assured based upon the methods discussed in Rosemont's application.

D. *Discuss and include in the application any proposed mitigation measures that were provided to the U.S. Forest Service that were based upon air quality modeling completed by the applicant. Provide the air quality modeling and results.*

PDEQ has no authority to approve or disapprove "any proposed mitigation measures" that are addressed to a different regulatory authority. Rosemont has not relied upon any such mitigation measures in its Class II air quality permit application. Therefore, they are not relevant to PDEQ's consideration of Rosemont's permit application.

Where Rosemont has chosen to propose measures such as air pollution controls beyond applicable New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants, or the requirements of Title 17 of the Pima County Code that are relevant to the permitting decision, such as Rosemont's decision to install better than NSPS controls on its stationary sources, Rosemont has included that information in the permit application and it is already available to PDEQ.

Rosemont previously provided its air quality modeling and results to PDEQ on or about September 7, 2010. PDEQ already has them posted on its website at:
http://www.deq.pima.gov/pdf/Rosemont/10-09-08%20Electronic%20Submittal/Rosemont%20Copper%20Project%20Aermod%20Modeling%20Report.pdf

The previously submitted information is still the most current.

Rosemont hopes that this discussion helps clarify the impact of the alternatives required by the NEPA process on its air permit application. Otherwise, federal law is clear that the EIS process is not relevant to state agencies acting under state law. PDEQ's sole role under NEPA is to present its comments and views to the lead agency. 42 U.S.C. § 4332(C). Neither Arizona law nor Title 17 of the Pima County Code provide for considering an EIS or the alternatives analysis that it contains and Arizona law is clear that local air pollution control authorities may not look beyond state law in determining whether to issue a permit:

> To ensure fair and open regulation under [the County air pollution control] article, a person: is entitled to have the control officer not base a permitting decision under this article in whole or in part on conditions or requirements that are not specifically authorized by a provision of this state's law as provided in section 49-471.10, subsection C.

A.R.S. § 49-471.01(A)(7). Section 49-471.10 states even more specifically:

> A control officer shall not base an air quality permitting decision in whole or in part on a requirement or condition that is not specifically authorized by a provision of this state's law. … A general grant of authority in this article does not constitute a basis for imposing a permitting requirement or condition unless a rule or ordinance is adopted pursuant to that general grant of authority that specifically authorizes the requirement or condition.

A.R.S. § 49-471.10(C). There is no provision of Arizona law or the Pima County Code that authorizes PDEQ to consider the EIS process. Rosemont's obligation is to show that its proposed source will comply. Rosemont has provided detailed information in its permit application showing how it will comply for each stationary source and how it will ensure that emissions from fugitive dust producing activities will be controlled to ensure compliance with the standards of Title 17 of the Pima County Code. These controls, and Rosemont's ability to assure compliance with the fugitive dust control standards, are not dependent upon the location of the fugitive dust producing activities. In short, the NEPA alternatives process is irrelevant to PDEQ's consideration of the pending permit application.

Necessary Additional Information II

RCM did not provide necessary information to determine if the source is a Class I, Class II, or synthetic minor Class II source. The application presents "worst case" process rates. The application did not provide Potential to Emit (PTE) calculations as defined in P.C.C. 17.04.340.A.175. A source's PTE is based on its maximum design capacities and not a combination of operations, processes, and equipment that would cause the "worst case"

emissions. Provide the PTE and all supporting calculations and assumptions used to determine the permit class of the source.

Response from Rosemont

Rosemont regrets any confusion that its application may have caused. Rosemont was trying to be clear that it was estimating the maximum possible emissions impact from its facilities, which includes both "point sources" (counted for purposes of determining the facility's potential to emit (PTE)) and "fugitive sources", which are not counted.

Point Sources

For purposes of the point sources, Rosemont has calculated PTE using the following methodology:

Uncontrolled or water spray controlled material handling equipment:
Uncontrolled material handling equipment (e.g., conveyor drop points, etc.) were calculated as follows:

PTE = 8760 hours/year * Equipment Nominal Rate, ton/hour * Emission Factor, lb/ton * 1 ton/2000 lbs

This factor is then adjusted downward by the control efficiency for water sprays and similar controls that do not rely upon a set air flow rate:

Controlled PTE = PTE * (1 – Control Efficiency)

Controlled material handling equipment:
Controlled material handling equipment (e.g., crushers, screens, etc.) that use a scrubber or dust collector with a relatively constant exhaust rate were calculated using the maximum design exhaust rate and the proposed emission limitation/grain loading, as follows:

PTE = 8760 hours/year * Emission Limitation, lb/hr * 1 ton/2000 lbs

PTE = 8760 hours/year * Exhaust rate, dscf/min * Grain Loading, gr/dscf * 1 lb/7000 gr * 1 ton/2000 lbs * 60 min/1 hr

In some cases metric equivalents were used.

Fuel burning equipment:
Fuel burning equipment PTE was calculated running the equipment "flat out" using the worst case fuel for 8760 hours.

For emergency generators, NSPS and NESHAP limit them in some cases to 100 hours testing/maintenance, but allow unlimited "emergency" operation. Rosemont thus used the prior federal guidance that provides that facilities should use 500 hours as a basis for estimating the PTE for both "emergency" and allowed "operating and testing" uses. Therefore, while Rosemont will meet the applicable NSPS and NESHAP limits for use of these units, Rosemont used 500 hours for calculating the PTE for both emergency and allowed non-emergency uses.

A more detailed explanation is found in Appendix 1 of this response and in the application materials.

Fugitive Sources

For purposes of fugitive sources (blasting, truck traffic, etc.), the simple methodology presented for point source PTE does not work because there is no "nominal" design value to work with. Fugitive sources either have constant emission rates such as stockpiles, or depend upon mining rates such as drilling, material handling, blasting, haul traffic, etc. The emission source that has the greatest impact on fugitive emissions is haul truck traffic travel on unpaved roads. This is demonstrated in Table E.4 of the application which shows that the total PM_{10} emissions from hauling of ore and waste rock comprises 70% of total PM_{10} emissions.For fugitive emission purposes, Rosemont evaluated the year where the mine plan of operations forecasts the greatest vehicle miles traveled by haul trucks hauling ore and waste rock. The highest vehicle miles traveled by haul trucks was predicted for Year 5. This year was then selected as the "worst case" estimate for purposes of calculating potential fugitive emissions. This approach is appropriate for calculating fugitive emissions for mining because the amount of ore, overburden, and low grade/waste rock to be hauled is an "inherent physical limitation" of mining and hence may be considered in establishing maximum emissions. It is also the approach that has been used for similar activities elsewhere in Pima County.

A more detailed explanation is set forth in Appendix 2.

Necessary Additional Information III

Since the application did not provide PTE calculations, PDEQ cannot determine the basis for the voluntarily accepted emission limitations and emission reductions for those processes identified in Section 4, Appendix D, and Appendix E of the application. Provide supporting documentation and calculations showing the emissions prior to the voluntarily accepted emission limitations. Provide supporting documentation and calculations on the resulting emission reductions from the voluntarily accepted emission limitations and the necessary information for P.C.C. 17.12.190 that demonstrates the reductions are permanent, quantifiable, and otherwise enforceable as a practical manner.

Response from Rosemont

As stated above, Rosemont regrets that the terminology it used was not as clear as it could be. As discussed with Messrs. Richard Grimaldi and Mukonde Chama on October 1, 2010, this is an initial permit application and therefore all limits are presented as "preconstruction" permit limits and not "voluntarily accepted emission limits" under P.C.C. 17.12.190. The terminology "voluntarily accepted emission limits" is confusing and inappropriate in an initial permit application.

Rosemont is committed to protecting the environment and to using air pollution controls that are better than the minimum regulatorily-required where appropriate. In this case, Rosemont has met with its vendors and determined that its scrubbers can and will achieve better than the NSPS minimums set forth in NSPS Subpart LL. Accordingly, Rosemont has proposed the more stringent limits as preconstruction review limits in this permit and has used them to calculate the potential to emit. These limits are intended to be permanent and are quantifiable and enforceable through the standard stack testing and monitoring that PDEQ routinely requires in all of its Class II air quality permits.

Using the proposed limits, the PTE of the various pollutants for use in determining permit classification is presented in the following table:

PTE for the RCM

Pollutant	PTE (tons/year)
PM	88.06
PM_{10}	67.62
$PM_{2.5}$	29.06
CO	9.00
NO_x	16.76
SO_2	0.06
VOCs	1.51
H_2SO_4	0.02
Greatest Individual HAP	1.18
Total HAPs	3.37

As can be seen, emissions from the Rosemont Copper Project are less than Class I permit thresholds so a Class II air quality permit is required.

Necessary Additional Information IV

The application identifies the primary crusher as subject to the standards under P.C.C. 17.16.360, Standards of Performance for Nonferrous Metals Industry Sources and not subject to 40 CFR 60, Subpart LL Standards of Performance for Metallic Mineral Processing Plants without providing an applicability determination. Provide an applicability determination with supporting documentation to demonstrate the primary crusher is not subject to 40 CFR 60, Subpart LL.

Response from Rosemont

While Rosemont believes that the Background Information Document suggests that crushers that are removed from both the open pit mine and the mill may not be subject to the NSPS, it does not believe that this is an issue that warrants disagreement given that the proposed crusher exceeds NSPS standards. Rosemont consents to treating the crusher as a unit subject to NSPS Subpart LL.

Necessary Additional Information V

The application states that the portable generators are non-road engines and therefore not subject to 40 CFR 60, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Provide an applicability determination with supporting documentation demonstrating that the portable generators are not subject to 40 CFR 60, Subpart IIII.

Response from Rosemont

We discussed this issue with Messrs. Grimaldi, Chama and Patesh on October 1, 2010. The "portable" generators are either used to power shovels and drills and move with the shovel and drills while moving or are frequently picked up and moved around the mine site, not staying in any single location for 12 months. These types of generators are non-road engines as defined at 40 C.F.R. §§ 60.4219 and 1068.30. A more detailed explanation is found in Appendix 1.

Necessary Additional Information VI

RCM has identified in its application that the emergency generators are subject to 40 CFR 60, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and will operate a 500 hours per year for maintenance and testing. In accordance with

40 CFR 60.4211 generators operating at 500 hours per year cannot be classified as emergency generators. The application must be revised to correctly reflect the type of generators that will be at the source consistent with 40 CFR 60, Subpart IIII.

Response from Rosemont

As discussed above, the units are emergency generators and Rosemont will meet the limits in the applicable NSPS and NESHAP on emergency use. Rosemont used the 500 hours of operation limit from federal guidance to provide PTE based on estimated combined "emergency" and allowable "non-emergency" use where the allowable non-emergency use is limited by the applicable NSPS and NESHAP. Rosemont believes that this is the best way to handle PTE calculations from emergency generators in the absence of a clear statement from EPA after the release of the new NSPS and NESHAP standards. It is a more conservative approach than just using the allowable "non-emergency" use hours while still observing the fact that emergency generators are not, and under no circumstances would be, used for 8760 hours in any year. Additional information is found in Appendix 1.

Rosemont appreciates the opportunity to meet with PDEQ staff and discuss the information request on Friday. Rosemont hopes that this information fully answers all of PDEQ's questions so that permit issuance can proceed forthwith. Please call me at (520) 784-1972 if you have any questions or concerns about this response.

Sincerely,

Katherine Ann Arnold, PE
Dir. Environmental and Regulatory Affairs

By my signature, I, Jamie Sturgess, Vice President, Sustainable Development, Rosemont Copper Company, hereby certify that based on information and belief formed after reasonable inquiry, the statements and information in the response to PDEQ's request for additional information are true, accurate, and complete.

Jamie Sturgess
Vice President, Sustainable Development

Attachments:

Appendix 1 (from Applied Environmental Consultants)
Appendix 2 (Alternatives Discussion)
Appendix 3 (Boundary map)

Doc. No. 042/10-15.10.1.3

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Attachment 1
Applied Environmental Consultants

ATTACHMENT A

RESPONSE TO ADDITIONAL INFORMATION REQUEST FROM PDEQ

Necessary Additional Information II

RCM did not provide necessary information to determine if the source is a Class I, Class II, or synthetic minor Class II source. The application presents "worst case" process rates. The application did not provide Potential to Emit (PTE) calculations as defined in P.C.C. 17.04.340.A.175. A source's PTE is based on its maximum design capacities and not a combination of operations, processes, and equipment that would cause the "worst case" emissions. Provide the PTE and all supporting calculations and assumptions used to determine the permit class of the source.

Response from RCM

The PTE of the facility corresponds to the non-fugitive emissions presented in Table 3.2 of the Class II Permit Application. Because the RCM is not among the "categorical sources" listed in P.C.C. 17.04.340.A.44, nor among the stationary source categories regulated pursuant to Section 111 or 112 of the Act, fugitive emissions are not included in the facility PTE.

The PTE of the regulated air pollutants of most interest in Table 3.2 of the Class II Permit Applications corresponds to particulate matter (PM, PM_{10}, and $PM_{2.5}$). The category of emission sources which comprise the PTE for particulate matter is presented in Table A.1.

Table A.1 Description of the Emission Sources Comprising the RCM's Annual Particulate PTE as Presented in the Class II Permit Application

Category of Emission Source	PTE (tpy)		
	PM	PM_{10}	$PM_{2.5}$
Control Devices	82.32	63.23	25.71
Non-Fugitive Transfer Points	2.31	2.00	1.77
Fuel Burning Equipment	1.10	0.78	0.54
Total Non-Fugitive	**85.72**	**66.02**	**28.02**

The PTE of PM, PM_{10}, and $PM_{2.5}$ is revised in this response to PDEQ's request for additional information. The PTE of all other regulated air pollutants at the RCM remain the same. A description of how the revised PTE is calculated for each emission source category is presented below. Detailed emission calculations showing the emission units that contribute to RCM's revised PTE are presented in Table A.2.

Emissions from the pollution control devices are calculated based upon continuous operation (8,760 hours/year) and the emission limits proposed in Table 4.1, pages 4-12 and 4-13 of the Class II Permit Application. The emission calculations for the Laboratory Dust Collectors in Table A.2 are now also based on 8,760 hours of operation, whereas emissions in the Class II Permit Application were based on 16 hour/day operation.

The fuel burning equipment includes the hot water generator, emergency generators, and fire water pumps. The hot water generator is part of the production process and PTE is calculated assuming maximum capacity and continuous (8,760 hours) operation. The emergency generators and fire water pumps are operated in emergency situations or for testing purposes to ensure readiness for emergency use when line power is interrupted or in case of a fire. The PTE from the emergency generators and fire water pumps are calculated using the maximum capacity and 500 hours of operation. Use of 500 operating hours/year to calculate the PTE for emergency generators (which also includes fire water pumps, as these are used for emergency purposes only) is consistent with various EPA policy documents, with one of the most recent being a February 14, 2006 letter from Steven C. Riva, Chief, Permitting Section, Air Programs Branch to William O'Sullivan, Director, Division of Air Quality, New Jersey Department of Environmental Protection. The letter is presented in Attachment D. The 500 hours thus represents both emergency and allowable non-emergency testing uses authorized under the applicable NSPS or NESHAP standards. RCM understands that no limits will be placed on emergency operation as a result of this approach. The calculation of PTE from the fuel burning equipment as described above is consistent with how the PTE was calculated in the Class II Permit Application.

Concentrate ore processing at the RCM includes various components with differing capacities. The filter system designed to remove water from the molybdenum concentrate, copper concentrate, and tailings represents the limiting process through the concentrator with an annual nominal rate of 4,950 tons/hour. Therefore, annual emissions from the molybdenum concentrate and tailings material transfer points are calculated using the nominal hourly process rate for the total material processed through the filter system (4,950 tons/hour), continuous operation, and the percentage of the filtered material which is molybdenum concentrate (0.015%) and tailings (98.7%). The same emissions factors and control efficiencies as presented in the Class II Permit Application are also used. This differs from how emissions were calculated in the Class II Permit Application, which used the anticipated annual molybdenum and tailings production rates.

Short term (hourly and daily) emissions in RCM's Class II Permit Application from the molybdenum concentrate and tailings material transfer points were calculated using the maximum possible hourly process rate of the equipment, as such values are necessary for use in demonstrating protection of hourly and daily national ambient air quality standards (NAAQS).

Emissions from the reagent material transfer points are calculated using the annual usage rates and continuous operation with the same emissions factors and control efficiencies presented in the Class II Permit Application. This is consistent with how the PTE was calculated in the Class II Permit Application.

As shown in Table A.2, the revised PTE for particulate matter increases to 88.06, 67.62, and 29.06 tpy for PM, PM_{10}, and $PM_{2.5}$, respectively. The revised particulate matter PTE and calculations in Table A.2 represent replacements for the corresponding emission units in the Class II Permit Application. The revised information is in bold text.

Table A.2 Revised PTE Calculations

Unit ID	Unit Description	Annual Process Rate	Rate Units	Emission Factors			EF Units	PTE (tpy)		
				PM	PM_{10}	$PM_{2.5}$		PM	PM_{10}	$PM_{2.5}$
Particulate Matter Pollution Control Devices										
PCL01	Crushing Area Scrubber (PC-CAS)	8,760	hours	1.57	1.28	0.81	lb/hr	6.90	5.61	3.53
PCL02	Stockpile Area Scrubber (PC-SAS)	8,760	hours	3.29	2.59	0.93	lb/hr	14.41	11.34	4.08
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	8,760	hours	1.36	1.07	0.39	lb/hr	5.95	4.69	1.69
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	8,760	hours	2.29	1.56	0.69	lb/hr	10.04	6.83	3.01
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	8,760	hours	4.51	3.55	1.28	lb/hr	19.75	15.55	5.60
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	8,760	hours	4.51	3.55	1.28	lb/hr	19.75	15.55	5.60
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	8,760	hours	0.02	0.02	0.02	lb/hr	0.09	0.09	0.08
PCL08	Molybdenum Dust Collector (PC-MDC) @ 8,760 hours/year	653,597,276	dscf	0.02	0.010	0.002	gr/dscf	0.99	0.47	0.07
PCL09	Laboratory Dust Collector 1 (PC-L1) @ 8,760 hours/year	**4,357,315,176**	dscf	0.007	0.005	0.003	gr/dscf	**2.23**	**1.56**	**1.03**
PCL10	Laboratory Dust Collector 2 (PC-L2) @ 8,760 hours/year	**4,357,315,176**	dscf	0.007	0.005	0.003	gr/dscf	**2.23**	**1.56**	**1.03**
PCL11	Laboratory Dust Collector 3 (PC-L3) @ 8,760 hours/year	**4,357,315,176**	dscf	0.007	0.005	0.003	gr/dscf	**2.23**	**1.56**	**1.03**
Non-Fugitive Transfer Points										
MD04	Molybdenum Concentrate Bin (B-MC) to Molybdenum Concentrate Hopper (H-MC) @ 8,760 hours/year	**6,377**	tons	0.0003	0.0002	0.00002	lb/ton	**0.001**	**0.0005**	**0.00008**
TDS04	Fixed Tailings Conveyor No. 2 (CV-F2) to Fixed Tailings Conveyor No. 3 (CV-F3) @ 8,760 hours/year	**42,804,687**	tons	0.00002	0.00001	0.000002	lb/ton	**0.52**	**0.25**	**0.04**
MS01	Transfer of Bulk Pebble Lime to the Bulk Pebble Lime Silo (S-BPL) [a]	37,800	tons	0.61	0.61	0.61	lb/ton	1.15	1.15	1.15
MS03	Bulk Pebble Lime Silo Screw Conveyor (CV-BPLS) to SAG Mill Feed Conveyor (CV-SMF)	37,800	tons	0.008	0.004	0.0006	lb/ton	0.16	0.07	0.01

Table A.2 Revised PTE Calculations

Unit ID	Unit Description	Annual Process Rate	Rate Units	Emission Factors			EF Units	PTE (tpy)		
				PM	PM_{10}	$PM_{2.5}$		PM	PM_{10}	$PM_{2.5}$
MS04	Transfer of Lime to the Lime Storage Bin (B-L) [a]	18,900	tons	0.61	0.61	0.61	lb/ton	0.58	0.58	0.58
MS05	Transfer of Sodium Metasilicate to the Sodium Metasilicate Storage Bin (B-SM) [a]	3,000	tons	0.008	0.004	0.0006	lb/ton	0.001	0.0006	0.00009
MS06	Transfer of Flocculant from Supersacks to Flocculant Storage Bins (B-F1/F2)	1,100	tons	0.008	0.004	0.0006	lb/ton	0.005	0.002	0.0003
MS07	Transfer of Guar from Bags to Guar Feeder (F-Gu)	150	tons	0.008	0.004	0.0006	lb/ton	0.0006	0.0003	0.00004
MS08	Transfer of Granular Cobalt Sulfate from Bags to Cobalt Sulfate Feeder (F-CoS)	6	tons	0.008	0.004	0.0006	lb/ton	0.00002	0.00001	0.000002
Fuel Burning Equipment										
FB01	Diesel Electrowinning Hot Water Generator (HWG)	8,760	hours	3.30	1.65	0.40	lb/1000 gal	0.63	0.32	0.08
		6.0	MMBtu/hr							
FB02	Thickener Area Emergency Generator (TEG)	500	hours	0.20	0.20	0.20	g/kW-hr	0.11	0.11	0.11
		1,000	kW							
FB03	PLS Pond Area Emergency Generator (PEG)	500	hours	0.20	0.20	0.20	g/kW-hr	0.11	0.11	0.11
		1,000	kW							
FB04	Main Substation Emergency Generator (MEG)	500	hours	0.20	0.20	0.20	g/kW-hr	0.08	0.08	0.08
		750	kW							
FB05	Administration Building Emergency Generator (AEG)	500	hours	0.20	0.20	0.20	g/kW-hr	0.08	0.08	0.08
		750	kW							

Table A.2 Revised PTE Calculations

Unit ID	Unit Description	Annual Process Rate	Rate Units	Emission Factors			EF Units	PTE (tpy)		
				PM	PM_{10}	$PM_{2.5}$		PM	PM_{10}	$PM_{2.5}$
FB06	Electrowinning Building Emergency Generator (EWEG)	500	hours	0.40	0.40	0.40	g/kW-hr	0.01	0.01	0.01
		50	kW							
FB07	Primary Crusher Fire Water Pump (PCFWP)	500	hours	0.20	0.20	0.20	g/kW-hr	0.03	0.03	0.03
		400	hp							
FB08	SX/EW Fire Water Pump (SXFWP)	500	hours	0.20	0.20	0.20	g/kW-hr	0.03	0.03	0.03
		400	hp							
Total Non-Fugitive Emissions:								**88.06**	**67.62**	**29.06**

[a] Controlled by Bin Vent Systems at a 90% efficiency.

Necessary Additional Information III

Since the application did not provide PTE calculations, PDEQ cannot determine the basis for the voluntarily accepted emission limitations and emission reductions for those processes identified in Section 4, Appendix D, and Appendix E of the application. Provide supporting documentation and calculations showing the emissions prior to the voluntarily accepted emission limitations. Provide supporting documentation and calculations on the resulting emission reductions from the voluntarily accepted emission limitations and the necessary information for P.C.C. 17.12.190 that demonstrates the reductions are permanent, quantifiable, and otherwise enforceable as a practical manner.

Response from Rosemont

RCM has proposed emission limits for its air pollution control devices that reflect the expected level of performance, which is better than the NSPS minimum set forth in 40 CFR 60, Subpart LL. The proposed emission limits are for the particulate matter pollution control devices.

Table A.3 presents the applicable requirement that applies to each particulate matter pollution control device, the corresponding emission standard, and the emission limitation that RCM is proposing. The applicable requirement for the Crushing Area Scrubber, Stockpile Area Scrubber, and Reclaim Tunnel Scrubber correspond to the revised applicable requirements described in RCM's response to PDEQ's Additional Information Request IV.

Annual PTE for the particulate matter pollution control devices based on the applicable requirement emission standard and the proposed emission limitations are presented in Table A.4. This table shows that the proposed emission limitations are more stringent than the required applicable emission standard. The PM_{10} and $PM_{2.5}$ fraction of PM emissions calculated using the applicable requirement emission standard and the PM and $PM_{2.5}$ fraction of PM_{10} emissions calculated using the proposed emission limitations are based on the size distribution of particulates exiting the control devices and represent best available data.

The calculation methodology explaining how emissions are calculated based on the required applicable emission standard is presented in Attachment B. Emissions tables showing the details of the calculations are presented in Attachment C. The methodology and emissions tables for calculating emissions based on the proposed emission limitations are presented in Appendix D and E, respectively, of the Class II Permit Application and as revised in RCM's response to PDEQ's Additional Information Request II.

The proposed emission limitations for PM_{10} will be permanent, quantifiable, and otherwise enforceable as a practical matter because they will be incorporated into the air quality permit with appropriate testing provisions to demonstrate compliance.

Table A.3 RCM's Proposed Emission Limits

Unit ID	Unit Description	Applicable Requirement		Proposed Emission Limitation
		Citation	Standard for Particulate Matter	
PCL01	Crushing Area Scrubber (PC-CAS)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 1.28 lb/hr
PCL02	Stockpile Area Scrubber (PC-SAS)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 2.59 lb/hr
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 1.07 lb/hr
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 1.56 lb/hr
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 3.55 lb/hr
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 3.55 lb/hr
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 0.02 lb/hr
PCL08	Molybdenum Dust Collector (PC-MDC)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 0.010 gr/dscf
PCL09	Laboratory Dust Collector 1 (PC-L1)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 0.005 gr/dscf
PCL10	Laboratory Dust Collector 2 (PC-L2)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 0.005 gr/dscf
PCL11	Laboratory Dust Collector 3 (PC-L3)	P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)	PM ≤ 0.022 gr/dscf	PM_{10} ≤ 0.005 gr/dscf

Table A.4 PTE Using Applicable Requirements and Proposed Emission Limitations

Unit ID	Non-Fugitive Unit Description	PTE Using the Applicable Requirement Emission Standard			PTE Using the Proposed Emission Limitation		
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
PCL01	Crushing Area Scrubber (PC-CAS)	12.24	9.94	6.22	6.90	5.61	3.53
PCL02	Stockpile Area Scrubber (PC-SAS)	24.82	19.57	7.13	14.41	11.34	4.08
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	10.20	8.04	2.93	5.95	4.69	1.69
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	14.96	10.18	4.46	10.04	6.83	3.01
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	34.00	26.81	9.77	19.75	15.55	5.60
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	34.00	26.81	9.77	19.75	15.55	5.60
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	0.18	0.18	0.17	0.09	0.09	0.08
PCL08	Molybdenum Dust Collector (PC-MDC)	1.02	0.48	0.073	0.99	0.47	0.070
PCL09	Laboratory Dust Collector 1 (PC-L1)	6.80	4.74	3.13	2.23	1.56	1.03
PCL10	Laboratory Dust Collector 2 (PC-L2)	6.80	4.74	3.13	2.23	1.56	1.03
PCL11	Laboratory Dust Collector 3 (PC-L3)	6.80	4.74	3.13	2.23	1.56	1.03

Necessary Additional Information IV

The application identifies the primary crusher as subject to the standards under P.C.C. 17.16.360, Standards of Performance for Nonferrous Metals Industry Sources and not subject to 40 CFR 60, Subpart LL Standards of Performance for Metallic Mineral Processing Plants without providing an applicability determination. Provide an applicability determination with supporting documentation to demonstrate the primary crusher is not subject to 40 CFR 60, Subpart LL.

Response from Rosemont

Although NSPS guidance indicates that primary crushers not located in the open-pit mine or at the mill or concentrator may not be subject to 40 CFR 60, Subpart LL, RCM will agree that these requirements will apply to the primary crusher. Based on this concurrence, RCM will also consider equipment located between the primary crusher and mill that meets the definition of an affected facility as subject to 40 CFR 60, Subpart LL. The additional equipment includes:

- Crusher Dump Hopper (H-CDp);
- Crusher Discharge Hopper (H-CDs);
- Crusher Discharge Feeder (F-CD
- Stockpile Feed Conveyor (CV-SF);
- Crusher Area Scrubber (PC-CAS);
- Stockpile Tripper Conveyor (CV-ST);
- Stockpile Area Scrubber (PC-SAS);
- Reclaim Feeders (F-R1/R4);
- Reclaim Conveyor (CV-R);
- Reclaim Tunnel Scrubber (PC-RTS); and
- SAG Mill Feed Conveyor (CV-SMF).

RCM's revised position on the applicability of 40 CFR 60, Subpart LL affects Table 6.1 in the Class II Permit Application. The revised applicable requirement of the equipment addressed above is shown in the revised Table 6.1 presented in Attachment E. The revised information is in bold text.

Additionally, the stockpile building and the copper concentrate loadout building should be subject to 40 CFR 60, Subpart LL. This equipment is added to the revised Table 6.1 presented in Attachment E.

Necessary Additional Information V

The application states that the portable generators are non-road engines and therefore not subject to 40 CFR 60, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Provide an applicability determination with supporting documentation demonstrating that the portable generators are not subject to 40 CFR 60, Subpart IIII.

Response from Rosemont

Internal combustion engines that meet the definition of non-road engines are excluded from the permitting requirements of PDEQ, and their emissions do not contribute to the potential to emit of a stationary source. From 40 CFR 89.2, 90.3, and 1068.30, non-road engines include:

1. IC engines that are in or on a piece of equipment that is self propelled or propels itself while performing another function such as tractors, off-highway mobile cranes, bulldozers, etc.

2. IC engines that are intended to be propelled while performing their functions such as lawnmowers.

Additionally, IC engines that are portable or transportable (i.e. designed to be moved from one location to another via wheels, skids, carrying handles, dolly, trailer, platform, or mounted on a vehicle) also qualify for non-road engine status provided they meet all of the following criteria:

1. Do not reside at the same location for 12 or more months.

2. Do not provide power to stationary equipment either as permanent engines or as replacements for permanent engines.

3. Do not provide power to seasonal sources (a seasonal source is equipment that remains at a single location with the RCM property two or more years and the equipment operates at least three months per year).

The portable generators mentioned in the Class II Permit Application meet the definition of non-road engines as they are portable, do not reside at the same location for 12 or more months, do not provide power to stationary equipment, and do not provide power to seasonal sources.

Additionally, 40 CFR 60.4200(a), states that Subpart IIII is “applicable to manufacturer’s, owners, and operators of stationary compression ignition internal combustion engines”. The definition of stationary internal combustion engine from 40 CFR 60.4219 means “any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE includes reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.”

Therefore, since the portable generators meet the definition of non-road engines, they are not subject to 40 CFR 60, Subpart IIII.

Necessary Additional Information VI

RCM has identified in its application that the emergency generators are subject to 40 CFR 60, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and will operate a 500 hours per year for maintenance and testing. In accordance with 40 CFR 60.4211 generators operating at 500 hours per year cannot be classified as emergency generators. The application must be revised to correctly reflect the type of generators that will be at the source consistent with 40 CFR 60, Subpart IIII.

Response from Rosemont

The annual emissions from the emergency generators at the RCM are calculated in the Class II Permit Application assuming 500 hours of operation. This corresponds to the annual hours estimated for emergency situations plus the annual hours needed to test and maintain the generators for preparation for use in emergency situations. The entire 500 hours is not needed for maintenance and testing purposes only.

The EPA distributed a memorandum on September 6, 1995 providing guidance on calculating the PTE for emergency generators. The memo is presented in Attachment D. The memo states that " for emergency generators, EPA has determined that a reasonable and realistic 'worst-case' estimate of the number of hours that power would be expected to be unavailable from the local utility may be considered in identifying the 'maximum capacity' of such generators for the purpose of estimating their PTE. The EPA believes that 500 hours is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions." This guidance has been confirmed in multiple subsequent guidance including a February 14, 2006 letter from Steven C. Riva, Chief, Permitting Section, Air Programs Branch to William O'Sullivan, Director, Division of Air Quality, New Jersey Department of Environmental Protection. This letter is also included in Attachment D. These guidance documents were used to calculate the PTE from the emergency generators at the RCM.

Furthermore, 40 CFR 60.4211(e) of Subpart IIII states that "there is no time limit on the use of emergency stationary internal combustion engines (ICE) in emergency situations". The only limitation on the operation of the emergency generators is in regards to the maintenance checks and readiness testing. The RCM presented the applicable requirement 40 CFR 60.4211(e) in Table 4.1 of the Class II Permit Application stating that the maintenance checks and readiness testing shall not exceed 100 hours/year for each emergency generator. Records will be maintained by the RCM to show compliance with this requirement.

ATTACHMENT B

EMISSION CALCULATION METHODOLOGY

B.1 INTRODUCTION

The RCM has the potential to emit the following regulated air pollutants from the emission units with proposed emission limitations: (a) particulate matter (PM); (b) particulate matter less than 10 microns in aerodynamic diameter (PM_{10}); and (c) particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$).

The methodology used to estimate emissions from the emission units with proposed emission limitations is described:

- In the following sections, for emissions based on the applicable requirement emission standard; and
- In Section D.10 of Appendix D of the RCM's original Class II Permit Application submitted to PDEQ on July 28, 2010, for emissions based on the proposed emission limitations.

In the following sections, the calculation of process rates and the determination of emission factors are discussed for each emission unit to fully explain how emissions based on the applicable requirement emission standard are calculated. All of the emission units with proposed emission limitations are pollution control devices, which do not have any additional controls. Therefore, control efficiencies are not discussed in this calculation methodology.

The emission tables showing the calculation of emissions based on the applicable requirement emission standard are presented in Attachment C. The emission tables showing the calculation of the emissions based on the proposed emission limitations are presented in Appendix E of the RCM's Class II Permit Application and as revised in RCM's response to PDEQ's Additional Information Request II.

B.2 METHODOLOGY

Process Rate

The annual, daily, and hourly process rates for the pollution control devices with proposed emission limitations are based on the exhaust flow rate of the units and the hours of operation. The exhaust flow rate and operating hours for each emission unit are presented in Table B.2.1. The information presented in Table B.2.1 is identical to the information presented in Table D.10.1 of the RCM's Class II Permit Application.

Table B.2.1 Process Rates for Pollution Control Devices with Proposed Emission Limitations

Unit ID	Unit Description	Exhaust Flow Rate	Operating Hours	
			Annual	Daily
PCL01	Crushing Area Scrubber (PC-CAS)	18,000 acfm	8,760	24
PCL02	Stockpile Area Scrubber (PC-SAS)	36,500 acfm	8,760	24
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	15,000 acfm	8,760	24
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	22,000 acfm	8,760	24
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	50,000 acfm	8,760	24
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	50,000 acfm	8,760	24
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	500 acfm	8,760	24
PCL08	Molybdenum Dust Collector (PC-MDC)	1,500 acfm	8,760	24
PCL09	Laboratory Dust Collector 1 (PC-L1)	10,000 acfm	8,760	24
PCL10	Laboratory Dust Collector 2 (PC-L2)	10,000 acfm	8,760	24
PCL11	Laboratory Dust Collector 3 (PC-L3)	10,000 acfm	8,760	24

Emission Factor

PM emissions based on the applicable requirement emission standard are calculated using the particulate matter emission standard of 0.05 grams/dscm (0.022 grains/dscf) in 40 CFR Section 60.382(a)(1).

The PM_{10} and $PM_{2.5}$ fractions of PM emissions are calculated using the PM and $PM_{2.5}$ particle size fractions of PM_{10} emissions presented in Table D.10.3 of Appendix D of the RCM's Class II Permit Application. The PM (equal to 1) and $PM_{2.5}$ particle size fractions presented in Table D.10.3 of the Class II Permit Application are divided by the PM fraction in order to generate the PM_{10} and $PM_{2.5}$ fractions of PM emissions. The particle size fractions of PM emissions are presented in Table B.2.2.

Table B.2.2 PM_{10} and $PM_{2.5}$ Fractions of PM Emissions for the Pollution Control Devices with Proposed Emission Limitations

Unit ID	Unit Description	PM_{10} Fraction	$PM_{2.5}$ Fraction
PCL01	Crushing Area Scrubber (PC-CAS)	0.81	0.51
PCL02	Stockpile Area Scrubber (PC-SAS)	0.79	0.29
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	0.79	0.29
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	0.68	0.30
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	0.79	0.29
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	0.79	0.29
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	0.99	0.93
PCL08	Molybdenum Dust Collector (PC-MDC)	0.47	0.07
PCL09	Laboratory Dust Collector 1 (PC-L1)	0.70	0.46
PCL10	Laboratory Dust Collector 2 (PC-L2)	0.70	0.46
PCL11	Laboratory Dust Collector 3 (PC-L3)	0.70	0.46

Because the emission factor is in terms of grains/dscf, the exhaust flow rate of each emission unit needs to be converted to dscf. The parameters needed to calculate the exhaust flow rate for each emission unit in units of dscf is presented in Table B.2.3. The following equations are used to convert the exhaust flow rates:

$$Q_{dscfm} = \frac{(Q_{acfm})(460 + T_{st})(P_{PC})}{(460 + T_{PC})(P_{st})}\left(1 - \frac{x_m}{100}\right) \qquad \text{(Equation 1a)}$$

$$P_{PC} = \left(P_{MSL} - \frac{GE + SH}{1000}\right)\left(\frac{1\,\text{psi}}{2.036\,\text{inches of Hg}}\right) \qquad \text{(Equation 1b)}$$

where:

Q_{dscfm} = exhaust flow rate of the pollution control device at dry, standard conditions (dscfm)

Q_{acfm} = actual exhaust flow rate of the pollution control device

T_{st}	=	standard temperature (68°F, definition in 40 CFR 60.2)
T_{PC}	=	temperature of the pollution control device exhaust (see Table B.2.3)
P_{st}	=	standard pressure (14.7 psi, definition in 40 CFR 60.2)
P_{PC}	=	pressure of the pollution control device (psi)
x_m	=	percent of moisture in the exhaust flow (The moisture percentages are uncertain. As a worst case scenario, a moisture content of 0% is assumed.)
P_{MSL}	=	pressure at mean sea level (29.92 in. Hg)
GE	=	ground elevation (5,350 feet at the RCM)
SH	=	stack height (see Table B.2.3)

Equation 1b is based on the estimate that for every 1,000 feet above sea level, the pressure decreases by 1 inch of mercury.

Table B.2.3 Properties of the Pollution Control Devices with Proposed Emission Limitations

Unit ID	Pollution Control Equipment	Exhaust Temperature (°F)	Stack Height (ft)
PCL01	Crushing Area Scrubber (PC-CAS)	Ambient [a]	24
PCL02	Stockpile Area Scrubber (PC-SAS)	Ambient	24
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	Ambient	24
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	Ambient	24
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	Ambient	24
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	Ambient	24
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	500	55
PCL08	Molybdenum Dust Collector (PC-MDC)	Ambient	20
PCL09	Laboratory Dust Collector 1 (PC-L1)	Ambient	20
PCL10	Laboratory Dust Collector 2 (PC-L2)	Ambient	20
PCL11	Laboratory Dust Collector 3 (PC-L3)	Ambient	20

[a] The average ambient temperature at the RCM is 62.43 °F (calculated from hourly data collected at the meteorological station at the RCM from April 2006 through May 2009).

The molybdenum scrubber and electrostatic precipitator are designed to operate in series. Therefore, they are treated as a single emission point. The properties listed in the above table are for the electrostatic precipitator, since it is the final piece of equipment exhausted to the atmosphere.

ATTACHMENT C

EMISSION TABLES

Table C.1 Particulate Matter Emission Factors										
Process Code	Process Description	Emission Standard				Production Rate Units	Particle Size Multiplier			Reference
		PM	PM_{10}	$PM_{2.5}$	Units		k (PM)	k (PM_{10})	k ($PM_{2.5}$)	
CAS	Crushing Area Scrubber	0.022	0.018	0.011	lb/hr	hours	1.00	0.81	0.51	NSPS, Subpart LL, Emission Standard
SAS	Stockpile Area Scrubber	0.022	0.017	0.006	lb/hr	hours	1.00	0.79	0.29	NSPS, Subpart LL, Emission Standard
RTS	Reclaim Tunnel Scrubber	0.022	0.017	0.006	lb/hr	hours	1.00	0.79	0.29	NSPS, Subpart LL, Emission Standard
PCAS	Pebble Crusher Area Scrubber	0.022	0.015	0.007	gr/dscf	dscf	1.00	0.68	0.30	NSPS, Subpart LL, Emission Standard
CCS	Copper Concentrate Scrubbers	0.022	0.017	0.006	gr/dscf	dscf	1.00	0.79	0.29	NSPS, Subpart LL, Emission Standard
MS/EP	Molybdenum Scrubber / Electrostatic Precipitator	0.022	0.022	0.020	gr/dscf	dscf	1.00	0.99	0.93	NSPS, Subpart LL, Emission Standard
MDC	Molybdenum Dust Collector	0.022	0.010	0.002	gr/dscf	dscf	1.00	0.47	0.07	NSPS, Subpart LL, Emission Standard
LDC	Laboratory Dust Collectors	0.022	0.015	0.010	gr/dscf	dscf	1.00	0.70	0.46	NSPS, Subpart LL, Emission Standard

Table C.2 Particulate Emissions of the Pollution Control Devices Prior to the Proposed Emission Limitations

Unit ID	Unit Description	Process Code	Production Rates			Rate Units	Emission Factors			EF Units	Annual Emissions (tpy)			Daily Emissions (tpd)			Hourly Emissions (lb/hr)		
			Annual	Daily	Hourly		PM	PM_{10}	$PM_{2.5}$		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
PCL01	Crushing Area Scrubber (PC-CAS)	CAS	7,841,889,407	21,484,629	895,193	hours	0.022	0.018	0.011	lb/hr	12.24	9.94	6.22	0.03	0.03	0.02	2.79	2.27	1.42
PCL02	Stockpile Area Scrubber (PC-SAS)	SAS	15,901,609,076	43,566,052	1,815,252	hours	0.022	0.017	0.006	lb/hr	24.82	19.57	7.13	0.07	0.05	0.02	5.67	4.47	1.63
PCL03	Reclaim Tunnel Scrubber (PC-RTS)	RTS	6,534,907,839	17,903,857	745,994	hours	0.022	0.017	0.006	lb/hr	10.20	8.04	2.93	0.03	0.02	0.008	2.33	1.84	0.67
PCL04	Pebble Crusher Area Scrubber (PC-PCAS)	PCAS	9,584,531,498	26,258,990	1,094,125	dscf	0.022	0.015	0.007	gr/dscf	14.96	10.18	4.46	0.04	0.03	0.01	3.42	2.32	1.02
PCL05	Copper Concentrate Scrubber 1 (PC-CCS1)	CCS	21,783,026,132	59,679,524	2,486,647	dscf	0.022	0.017	0.006	gr/dscf	34.00	26.81	9.77	0.09	0.07	0.03	7.76	6.12	2.23
PCL06	Copper Concentrate Scrubber 2 (PC-CCS2)	CCS	21,783,026,132	59,679,524	2,486,647	dscf	0.022	0.017	0.006	gr/dscf	34.00	26.81	9.77	0.09	0.07	0.03	7.76	6.12	2.23
PCL07	Molybdenum Scrubber (PC-MS) / Electrostatic Precipitator (PC-EP)	MS/EP	118,392,677	324,363	13,515	dscf	0.022	0.022	0.020	gr/dscf	0.18	0.18	0.17	0.0005	0.0005	0.0005	0.04	0.04	0.04
PCL08	Molybdenum Dust Collector (PC-MDC)	MDC	653,597,276	1,790,677	74,612	dscf	0.022	0.010	0.002	gr/dscf	1.02	0.48	0.07	0.003	0.001	0.0002	0.23	0.11	0.02
PCL09	Laboratory Dust Collector 1 (PC-L1)	LDC	4,357,315,176	11,937,850	497,410	dscf	0.022	0.015	0.010	gr/dscf	6.80	4.74	3.13	0.02	0.01	0.009	1.55	1.08	0.71
PCL10	Laboratory Dust Collector 2 (PC-L2)	LDC	4,357,315,176	11,937,850	497,410	dscf	0.022	0.015	0.010	gr/dscf	6.80	4.74	3.13	0.02	0.01	0.009	1.55	1.08	0.71
PCL11	Laboratory Dust Collector 3 (PC-L3)	LDC	4,357,315,176	11,937,850	497,410	dscf	0.022	0.015	0.010	gr/dscf	6.80	4.74	3.13	0.02	0.01	0.009	1.55	1.08	0.71

ATTACHMENT D

EPA DOCUMENTS

EPA LETTER FROM STEVEN C. RIVA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 Broadway
New York, NY 10007-1866

February 14, 2006

Mr. William O'Sullivan, Director
Division of Air Quality
New Jersey Department of
Environmental Protection
PO Box 423
401 East State Street, 3rd floor
Trenton, NJ 08625-0423

Dear Mr. O'Sullivan:

This is in response to your December 13, 2005 e-mail and February 6, 2006 follow-up e-mail inquiry to me regarding a discussion that you saw in Pages 23-25 of the proposed New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (ICE). More specifically, you mentioned that in the proposed rule in the evaluation of "best demonstrated technology" for the emergency generators, EPA took into account no hour limits on actual emergency use and that EPA only took into account hours the manufacturer recommended for test firing the units, i.e., 30 hours in this case. You specifically mentioned an EPA statement in the proposed NSPS which says "[t]here is no time limit on the use of emergency stationary ICE in emergency situations." You also mentioned that this approach is consistent with what New Jersey recently did with the NOx RACT rule, i.e., removing the 500 hour/year total use limitation and replacing it with restrictions on the use of the equipment to maintenance and testing recommended by the manufacturer (to be specified in individual permits).

You stated that consistent with the New Jersey NOx RACT Rule and the proposed NSPS, New Jersey intends to specify that the potential to emit (PTE) for emergency generators be the emissions associated with non-emergency use, i.e., the 30 hours in this particular NSPS case (but up to 100 hours in some other cases). According to your proposal, actual emergency use would not count against PTE. You reasoned that otherwise we would be restricting the actual use of emergency generators which is not what New Jersey or EPA intends. New Jersey wanted a confirmation that this approach is appropriate.

We raised this issue with our Office Air Quality Planning and Standards (OAQPS) and Office of Enforcement and Compliance Assurance (OECA). The consensus is that for the purposes of determining PTE in the New Source Review (NSR) and the Title V programs, EPA has no policy that specifically requires exclusion of "emergency" (or malfunction) emissions. Rather,

to determine PTE, a source must estimate its emissions based on the worst-case scenario taking into account startups, shutdowns and malfunctions. The EPA statement that you quote above from the proposed NSPS is for the purposes of determining the actual cost of a control technology for NSPS purposes. As you know, the intended effect of the proposed NSPS standard is to require all new, modified, and reconstructed stationary CI ICE to use the best demonstrated system of continuous emission reduction, considering costs, non-air quality health, and environmental and energy impacts. So in determining the actual cost of the control technology being proposed, EPA took into account no hour limits on actual emergency use of the equipment. In determining PTE, there is no actual cost consideration factored into it. So the EPA statement would not be appropriate in that case.

Consequently, it is EPA's opinion that for the purposes of the NSR and the Title V programs, New Jersey should continue as they have and permit emergency units at some amount of operation sufficiently large to cover emergencies (i.e., 500 hours a year). Malfunctions that may require the operation of the emergency units and that may exceed the 500 hours/year limit could be handled through enforcement discretion on a case-by-case basis, as appropriate.

If you have any questions, please contact me at (212) 637-4074.

Sincerely,

/s/

Steven C. Riva, Chief
Permitting Section
Air Programs Branch

bcc:	J. Siegel,	2ORC-AIR
	F. Jon,	2APB-PS
	R. Ruvo,	2APB-SIP
	S. Riva,	2APB-PS
	APB File	

EPA MEMO ON CALCULATING THE PTE FOR EMERGENCY GENERATORS

September 6, 1995

MEMORANDUM

SUBJECT: Calculating Potential to Emit (PTE) for Emergency Generators

FROM: John S. Seitz, Director
Office of Air Quality Planning and Standards (MD-10)

TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV
Director, Air and Waste Management Division, Region II
Director, Air, Radiation and Toxics Division, Region III
Director, Air and Radiation Division, Region V
Director, Air, Pesticides and Toxics Division, Region VI
Director, Air and Toxics Division, Regions VII, VIII, IX, and X

The purpose of this guidance is to address the determination of PTE for emergency electrical generators.

Background

In a memorandum dated January 25, 1995, the Environmental Protection Agency (EPA) addressed a number of issues related to the determination of a source's PTE under section 112 and title V of the Clean Air Act (Act). One of the issues discussed in the memorandum was the term "maximum capacity of a stationary source to emit under its physical and operational design," which is part of the definition of "potential to emit." The memorandum clarified that inherent physical limitations, and operational design features which restrict the potential emissions of individual emission units, can be taken into account. This clarification was intended to address facilities for which the theoretical use of equipment is much higher than could ever actually occur in practice. For such facilities, if their

physical limitations or operational design features are not taken

into account, the potential emissions could be overestimated and consequently the source owner could be subject to the Act requirements affecting major sources. Although such source owners could in most cases readily accept enforceable limitations restricting the operation to its designed level, EPA believes this administrative requirement for such sources to be unnecessary and burdensome.

On the topic of "physical and operational design," the January 25 memorandum provided a general discussion. In addition, EPA committed to providing technical assistance on the type of inherent physical and operational design features that may be considered acceptable in determining the potential to emit for certain individual small source categories. The EPA is currently conducting category-specific analyses in support of this effort, and hopes as a result of these analyses to generate more general guidance on this issue as well.

The purpose of this memorandum is to address the issue of PTE as it relates specifically to emergency generators. There is a significant level of interest in this source category because there are many thousands of locations for which an emergency generator is the only emitting source. Moreover, based on a review of this source category, there exists a readily identifiable constraint on the operational design of emergency generators. Hence, the EPA believes it would be useful to provide today's guidance before the entire effort is complete.

The policies set forth in this memorandum are intended solely as guidance, do not represent final Agency action, and cannot be relied upon to create any rights enforceable by any party.

Guidance for Emergency Generators

For purposes of today's guidance, an "emergency generator" means a generator whose sole function is to provide back-up power when electric power from the local utility is interrupted. The emission source for such generators is typically a gasoline or diesel-fired engine, but can in some cases include a small gas turbine. Emissions consist primarily of carbon monoxide and nitrogen oxides. Other criteria pollutants, and hazardous air pollutants, are also emitted, but at much lower levels. Emissions occur only during emergency situations (i.e., where electric power from the local utility is interrupted), and for a very short time to perform maintenance checks and operator training.

The EPA believes that generators devoted to emergency uses are clearly constrained in their operation, in the sense that, by definition and design, they are used only during periods where electric power from public utilities is unavailable. Two factors indicate that this constraint is in fact "inherent." First, while the combined period for such power outages during any one year will vary somewhat, an upper bound can be estimated which would never be expected to be exceeded absent extraordinary circumstances. Second, the duration of these outages are entirely beyond the control of the source, and when they do occur (except in the case of a major catastrophe) rarely last more than a day.

For emergency generators, EPA has determined that a reasonable and realistic "worst-case" estimate of the number of hours that power would be expected to be unavailable from the local utility may be considered in identifying the "maximum capacity" of such generators for the purpose of estimating their PTE. Consequently, EPA does not recommend the use of 8760 hours per year (i.e., full-year operation) for calculating the PTE for emergency generators. Instead, EPA recommends that the potential to emit be determined based upon an estimate of the maximum amount of hours the generator could operate, taking into account (1) the number of hours power would be expected to be unavailable and (2) the number of hours for maintenance activities.

The EPA believes that 500 hours is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions. Alternative estimates can be made on a case-by-case basis where justified by the source owner or permitting authority (for example, if historical data on local power outages indicate that a larger or smaller number would be appropriate). Using the 500 hour default assumption, EPA has performed a number of calculations for some typically-sized emergency generators. These calculations indicate that these generators, in and of themselves, rarely emit at major source levels. (Of course, there may be unusual circumstances where these calculations would not be representative, for example where many generators are present that could operate simultaneously).

Cautions

Today's guidance is only meant to address emergency generators as described. Specifically, the guidance does not address: (1) peaking units at electric utilities; (2) generators at industrial facilities that typically operate at low rates, but are not confined to emergency purposes; and (3) any standby

generator that is used during time periods when power is available from the utility. This guidance is also not intended to discourage permitting authorities from establishing operational limitations in construction permits when such limitations are deemed appropriate or necessary. Additionally, this memorandum is not intended to be used as the basis to rescind any such restrictions already in place.

Distribution/Further Information

The Regional Offices should send this memorandum to States within their jurisdiction. Questions concerning specific issues and cases should be directed to the appropriate Regional Office. Regional Office staff may contact Tim Smith of the Integrated Implementation Group at 919-541-4718. The document is also available on the technology transfer network (TTN) bulletin board, under "Clean Air Act" - "Title V" - "Policy Guidance Memos". (Readers unfamiliar with this bulletin board may obtain access by calling the TTN help line at 919-541-5384).

cc: Air Branch Chief, Region I-X
Regional Air Counsels, Region I-X
Adan Schwartz (2344)
Tim Smith (MD-12)

ATTACHMENT E

REVISIONS TO RCM'S CLASS II PERMIT APPLICATION

Table 6.1 (Revised) Process and Control Equipment Description Which Require a Permit

Equipment	Equipment ID	Manufacturer / Model [a]	Quantity	Size or Capacity	Emission Status / Control Device	Applicable Regulatory Requirements
Crusher Dump Hopper	H-CDp	na	1	680 tons	Fugitive / Water Sprays	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Primary Crusher	PCr	Sandvik	1	6,950 tons/hr	Non-Fugitive / Crushing Area Scrubber	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Crusher Discharge Hopper	H-CDs	na	1	725 tons	No Emissions (Enclosed Process)	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Crusher Discharge Feeder	F-CD	na	1	25' L X 96" W	Non-Fugitive / Crushing Area Scrubber [b]	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Stockpile Feed Conveyor	CV-SF	na	1	2,690' L X 60" W	Non-Fugitive / Crushing Area Scrubber [b]	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Crushing Area Scrubber	PC-CAS	na	1	18,000 acfm	Non-Fugitive	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Stockpile Tripper Conveyor	CV-ST	na	1	343' L X 60" W	Non-Fugitive / Stockpile Area Scrubber [b,c]	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Stockpile Area Scrubber	PC-SAS	na	1	36,500 acfm	Non-Fugitive	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Reclaim Feeders	F-R1/R4	na	4	20' L X 48" W	No Emissions (Located Underground)	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**

Table 6.1 (Revised) Process and Control Equipment Description Which Require a Permit

Equipment	Equipment ID	Manufacturer / Model [a]	Quantity	Size or Capacity	Emission Status / Control Device	Applicable Regulatory Requirements
Reclaim Conveyor	CV-R	na	1	932' L X 60" W	Non-Fugitive / Reclaim Tunnel Scrubber	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Reclaim Tunnel Scrubber	PC-RTS	na	1	15,000 acfm	Non-Fugitive	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
SAG Mill Feed Conveyor	CV-SMF	na	1	660' L X 60" W	Non-Fugitive / Pebble Crusher Area Scrubber [b]	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Stockpile Building	**BD-S**	**na**	**1**	**390' L X 228' W X 104' H**	**No Emissions (Enclosed Process)**	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**
Copper Concentrate Loadout Building	**BD-CCL**	**na**	**1**	**175' L X 101' W X 60' H**	**No Emissions (Enclosed Process)**	**P.C.C. Section 17.16.490.A.43 (40 CFR 60, Subpart LL)**

[a] na = not available at this time

[b] This equipment has water spray control for fugitive particulate emissions not captured by the scrubbers. Emission calculations in this permit application are based on 100% capture efficiency of the scrubbers.

[c] This equipment is located within the coarse ore stockpile building in addition to being controlled by the scrubbers. Emission calculations in this permit application are based on 100% capture efficiency of the scrubbers.

Introduction

While reviewing information to prepare RCM's response to PDEQ's request for additional information, one minor error was identified in Appendix D, Emission Calculation Methodology, of the RCM's Class II Permit Application. Pursuant to P.C.C. 17.12.165.G, the RCM is identifying the error and supplying the corrected information in this attachment.

Identification of the Incorrect Information

Equation 8b in Section D.10 of the Emission Calculation Methodology presents how to calculate the pressure of the pollution control equipment exhaust. Part of the equation inadvertently states that the stack height is subtracted from the ground elevation. In actuality, the stack height should be added to the ground elevation in order to correctly calculate the pressure of the pollution control equipment exhaust. All emission rates presented in the Class II Permit Application are calculated using the correct equation. Just the equation presented in the Emission Calculation Methodology is incorrect.

Corrected Information

The corrected equation for calculating the pressure of the pollution control equipment exhaust is presented in Equation E1 below. This equation shall be used in place of Equation 8b in Section D.10 of RCM's Class II Permit Application.

$$P_{PC} = \left(P_{MSL} - \frac{GE + SH}{1000}\right)\left(\frac{1\,\text{psi}}{2.036\,\text{inches of Hg}}\right) \qquad \text{(E1)}$$

where:

P_{PC}	=	pressure of the pollution control equipment exhaust (psi)
P_{MSL}	=	pressure at mean sea level (29.92 in. Hg)
GE	=	ground elevation (5,350 feet at the RCM)
SH	=	stack height (see Table D.10.2 in the Class II Permit Application)

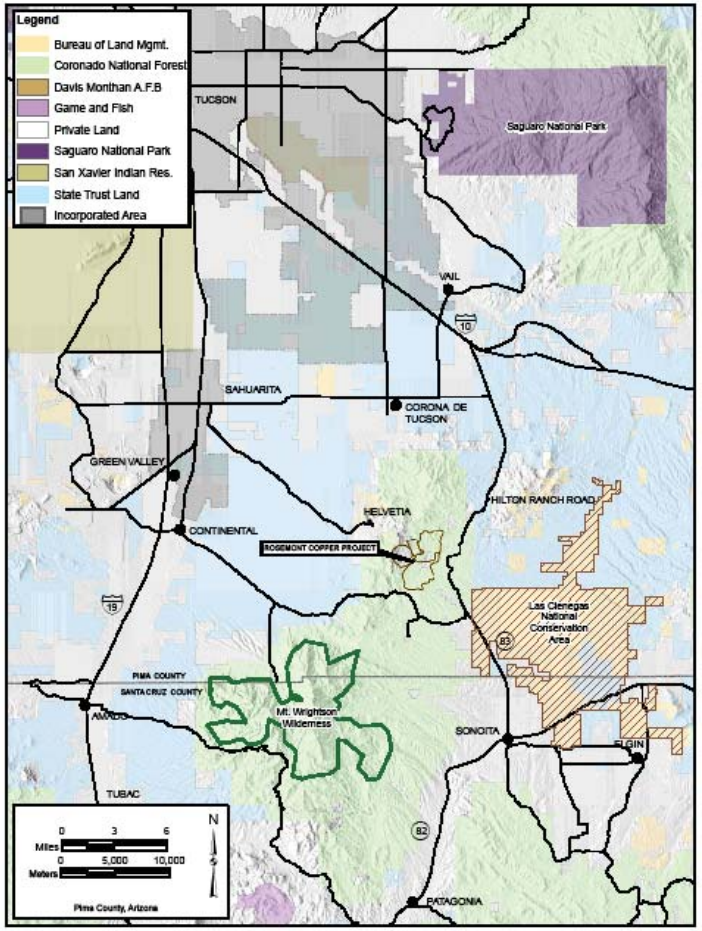
ROSEMONT COPPER
A Bridge to a Sustainable Future.

Attachment 2
Alternatives Discussion

Rosemont Copper Project

Rosemont Copper Project Alternatives
Presentation to Cooperating Agencies
July 15, 2010

Project Location



Vicinity Map

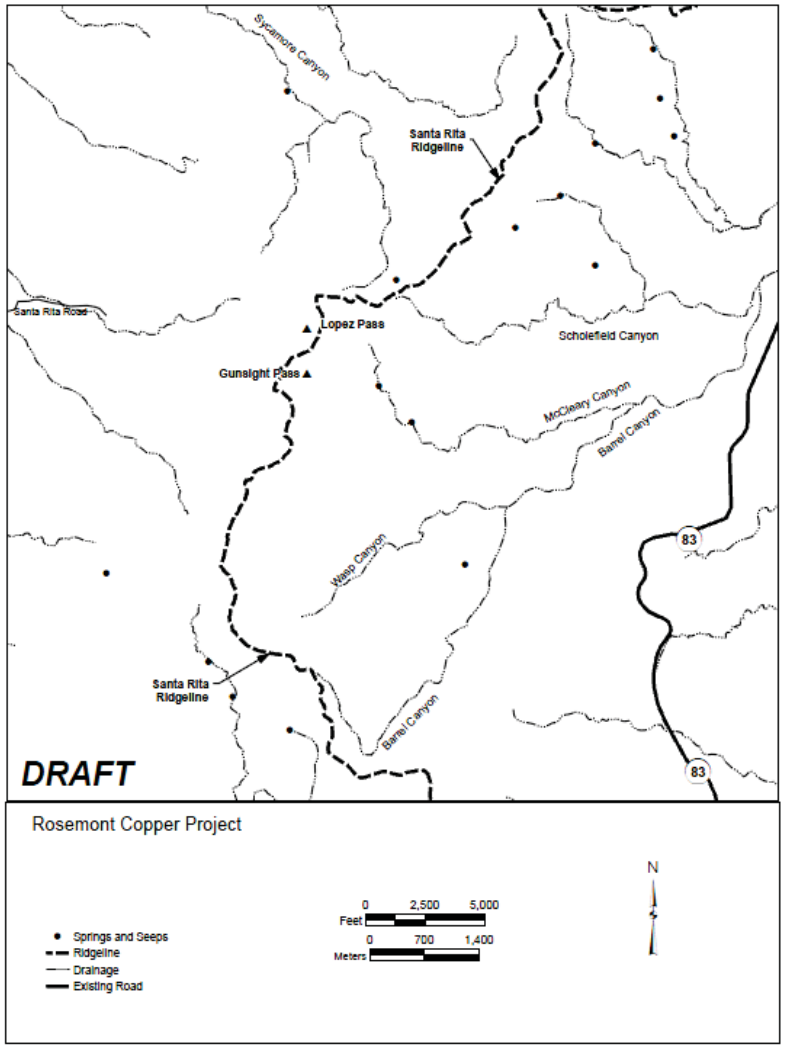
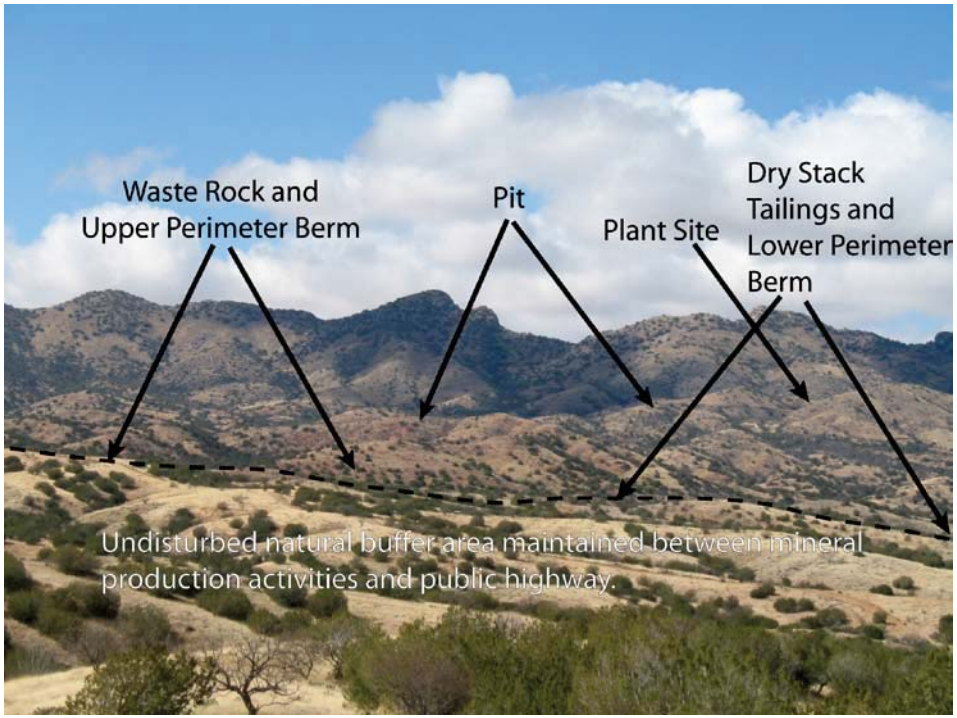


Figure x. No action.

No Action Alternative

Proposed Action Overview

- Mining of copper, molybdenum, silver and gold in a 1.2 mile diameter open pit
- Ore concentrating and metal recovery in mill and solvent extraction electrowinning plant
- Waste rock and dry stack tailings facilities with 3 by 1 mile footprint



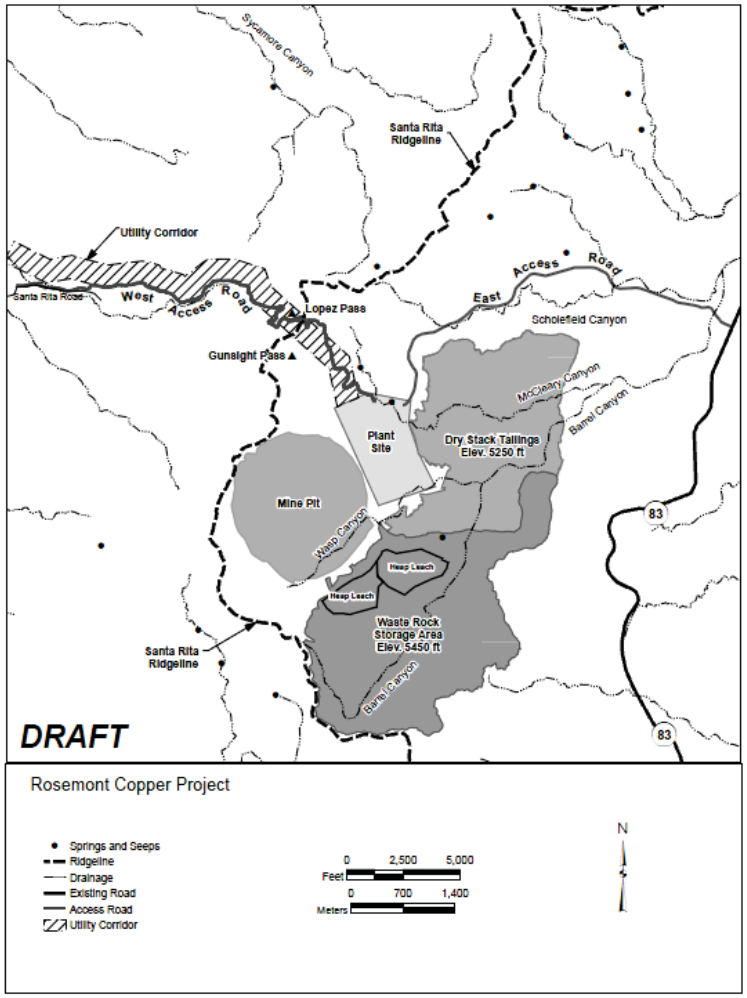


Figure x. Proposed action.

Proposed Action Facilities Design

Draft Environmental Impact Statement Alternatives

- Proposed Action
- No Action
- Phased Tailings
- Scholefield
- Barrel Only (Landforming)

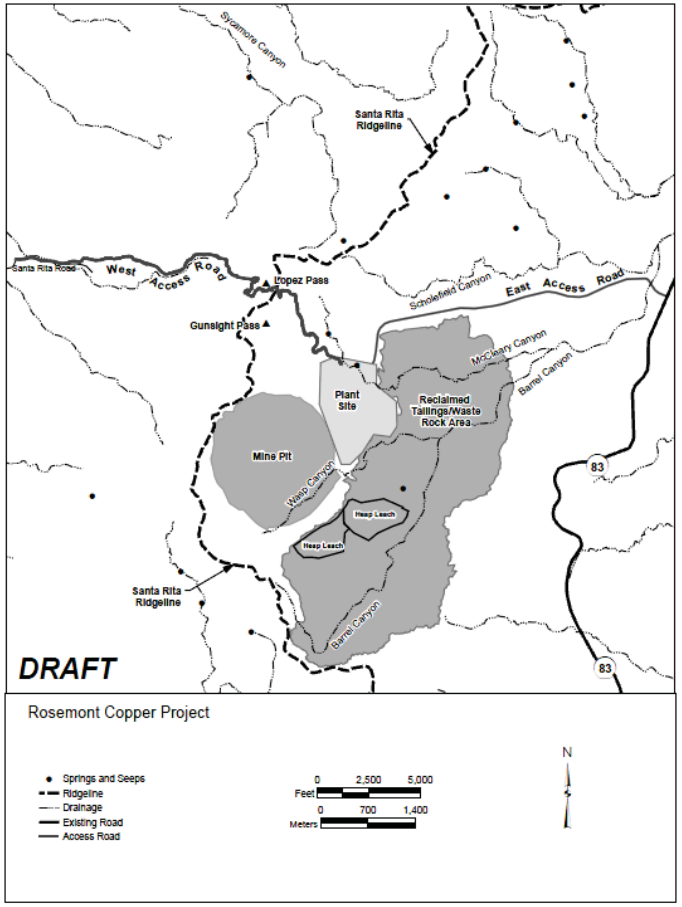


Figure x. Phased tailings alternative.

Phased Tailings Alternative Facilities Design

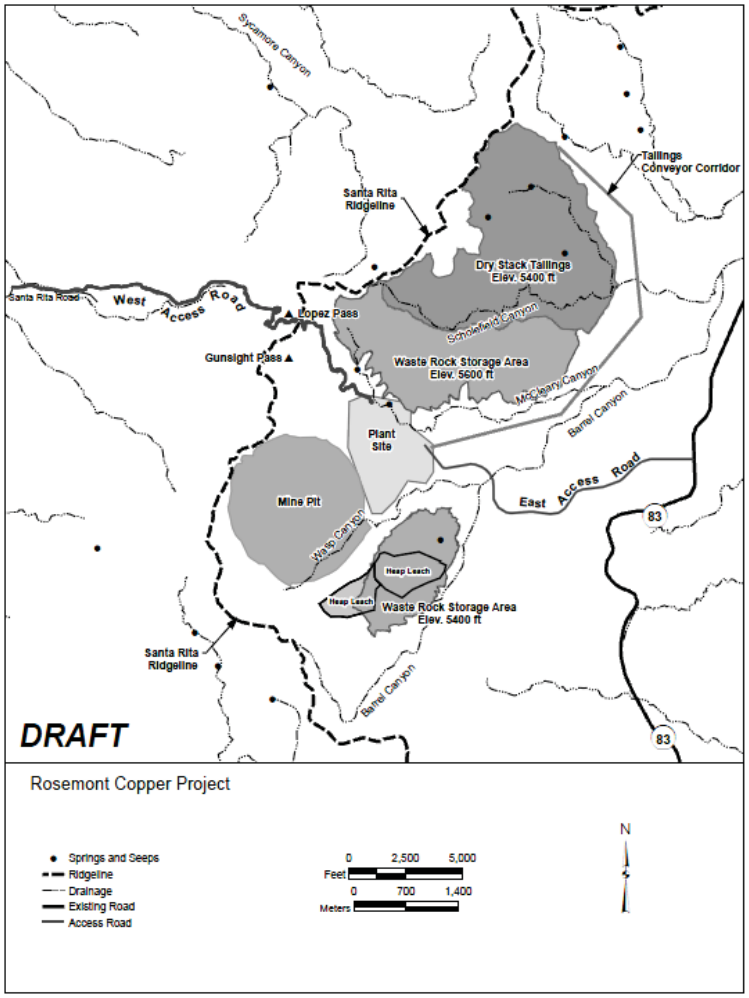
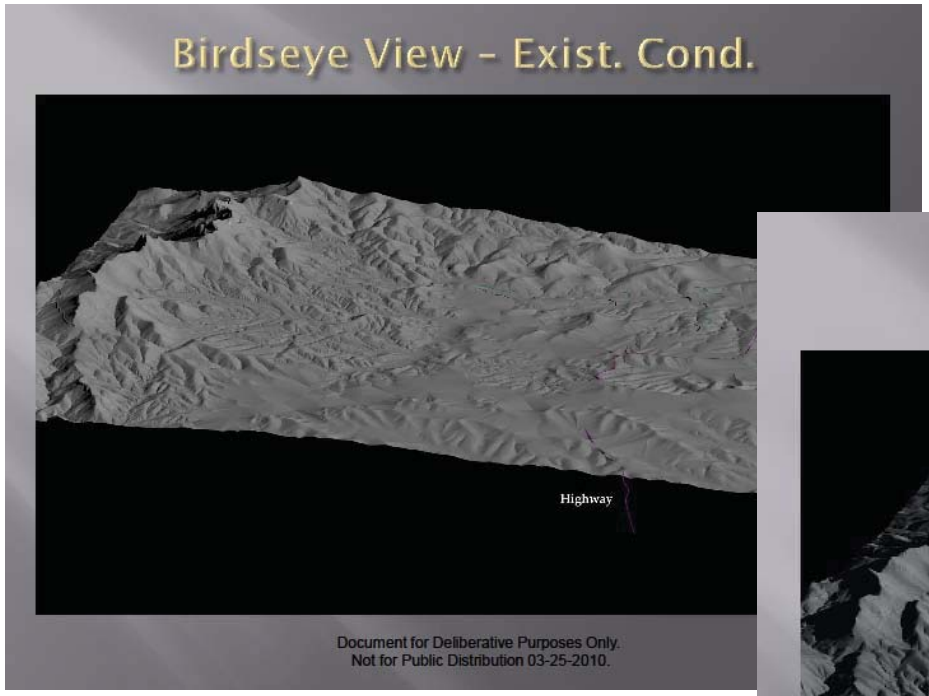


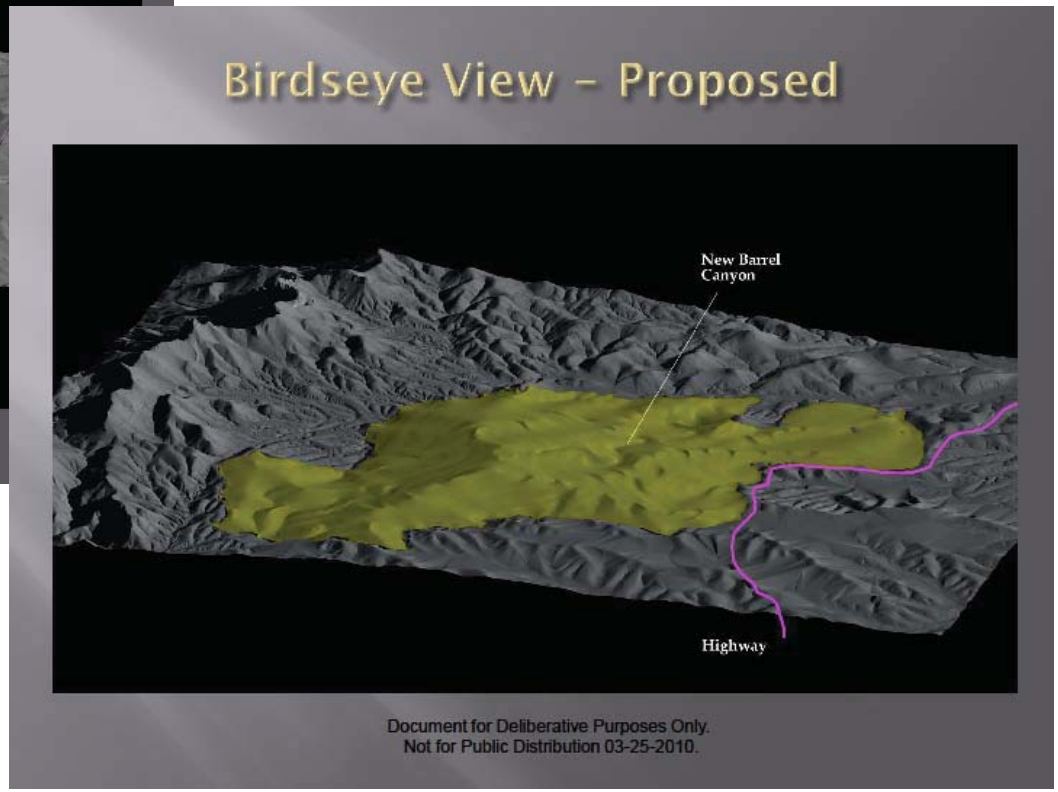
Figure x. Scholefield alternative.

Scholefield Facilities Design

Traditional Tailings and Waste Rock Topography

Barrel Only Landforming Alternative
Reproducing Natural Landscape Topography





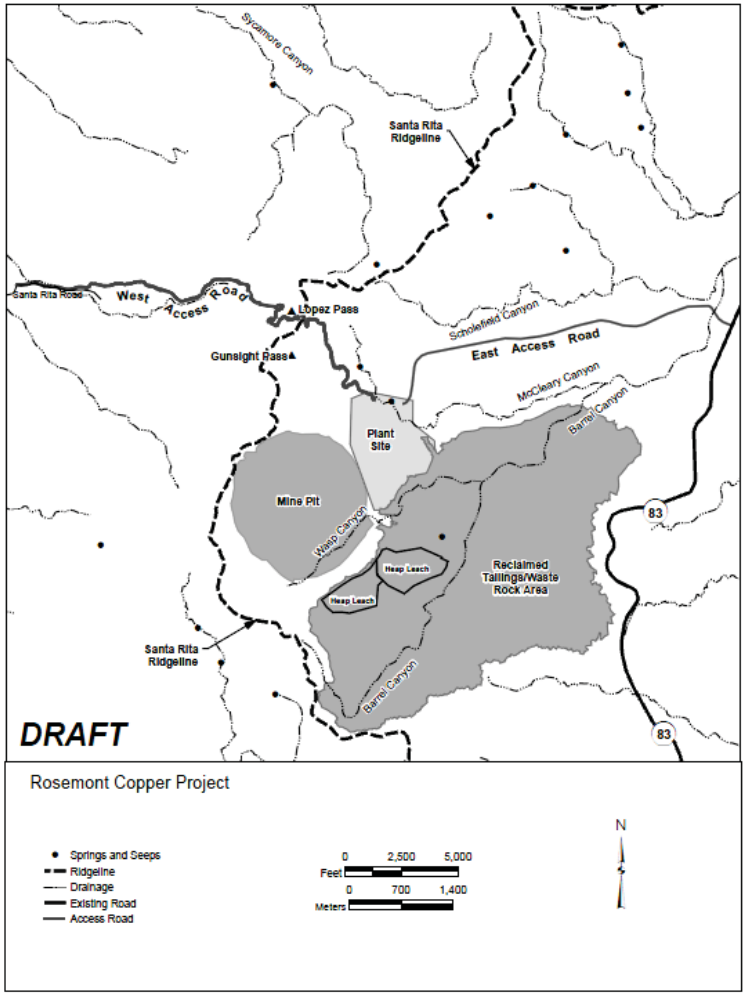


Figure x. Barrel alternative.

Barrel Only (Landforming) Alternative Facilities Design

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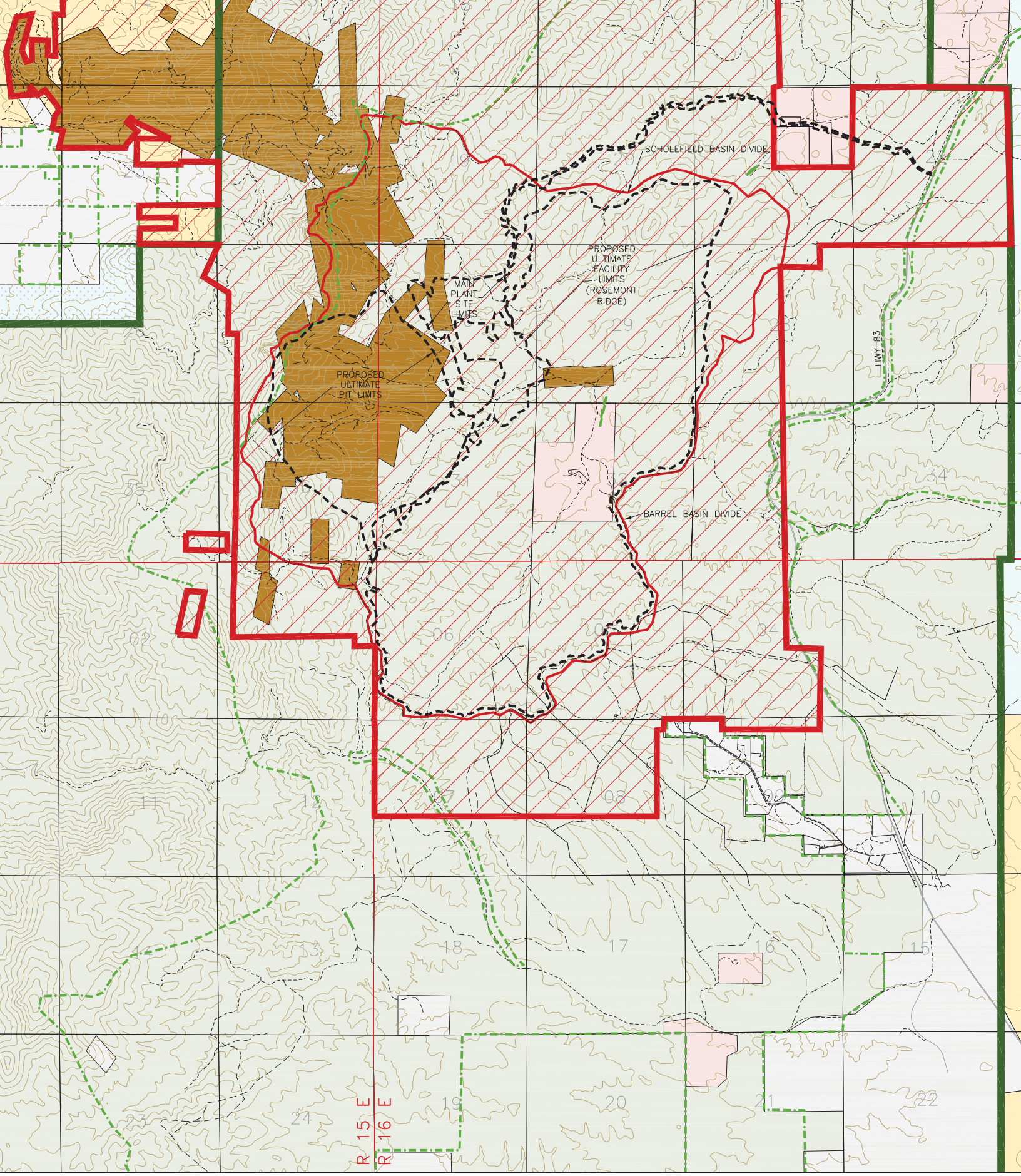
Attachment 3
Boundary Map



LEGEND

ROSEMONT UNPATENTED CLAIMS

PATENTED CLAIMS

ROSEMONT PRIVATE LAND

CORONADO NATIONAL FOREST BOUNDARY

N