

Air Quality Compliance Plan

Air Quality Control Permit No. 67001

Mitigation and Monitoring Measures:

OA-AQ-01, OA-AQ-02, OA-AQ-03, OA-AQ-04,
OA-AQ-05, OA-AQ-08, OA-AQ-09, OA-AQ-11,
and RC-AQ-01

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HUDBAY

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Revision Log

<i>Revision Number</i>	<i>Revision Lead</i>	<i>Purpose of Revision</i>	<i>Revision Date</i>
1	Rosemont	Updated plan date from original June 2017 MPO submittal, added revision number.	March 2018
2	Rosemont	Updated per issuance of air quality control permit No. 67001.	June 2018

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1.0 PLAN OBJECTIVE AND DESCRIPTION

This *Air Quality Compliance Plan* (Plan) was developed to comply with conditions set forth in: 1) the Arizona Department of Environmental Quality (ADEQ) Air Quality Control Permit No. 67001 (Permit; ADEQ, 2018a) and Administrative Amendment No. 71731 (ADEQ, 2018b) issued to the Rosemont Copper Company (Rosemont) for the Rosemont Copper Project (Project); and 2) mitigation and monitoring measure (Mitigation Measure) requirements of the U.S. Forest Service's (USFS, Forest Service) Coronado National Forest (Coronado) Final Environmental Impact Statement (FEIS; USFS, 2013) for the Project.

The Project has an address of 21900 S. Sonoita Highway, Vail, Arizona 85641, which is approximately 30 miles southeast of Tucson, west of State Highway 83, in Pima County, Arizona. The Permit is a Class II synthetic minor permit. Rosemont voluntarily accepted emission limitations to stay below major source thresholds for a Title V air quality permit. ADEQ issued the initial Permit to Rosemont on January 31, 2013. Hudbay Minerals Inc. (Hudbay) acquired Rosemont Copper Company (Rosemont) and its parent company, Augusta Resource Corporation, in July 2014.

Rosemont Copper Company (Rosemont) will be required to submit renewal applications for the air permit every five years during operations. Therefore, Rosemont will abide by the conditions in the Air Quality Control Permit in force and applicable at the time. Rosemont will report to both ADEQ and the Forest Service accordingly.

Compliance with the Permit provisions began upon issuance. Monitoring of Permit provisions will be discontinued in the Final Reclamation and Closure Phase (Closure Phase) and ADEQ's approval.

1.1 PLAN OBJECTIVE

The objective of this Plan is to:

- Summarize all air quality monitoring and reporting requirements associated with Air Quality Control Permit No. 67001, including any requirements found in Appendix B of the FEIS (USFS, 2013), the Errata to the FEIS (USFS, 2017a), and the record of decision (ROD; USFS, 2017b).

This Plan presents general and detailed summaries of all the monitoring, recordkeeping, testing, reporting, and other submittals required by the Permit, including the *Dust Control Plan* (see Appendix D of the Permit). Also incorporated in this summary are the monitoring and reporting requirements listed in the *Dry Tailings Management Plan* (DTMP, MPO Volume IV-h). The DTMP, MPO Volume IV-h was developed as a Permit condition, the objectives of which are to minimize the generation of fugitive dust from the Dry Stack Tailings Facility (DSTF) and to meet visual opacity and emission limits for particulate matter less than 10 microns in aerodynamic diameter (PM₁₀) as related to the DSTF. The following operational conditions are addressed in the DTMP, MPO Volume IV-h:

- Tailings dust control during perimeter buttress construction;
- Tailings dust control during normal non-perimeter buttress construction operations;
- Tailings dust control at all other times; and
- Additional tailings dust control and monitoring methods during periods of high winds.

Additional documentation developed as part of Permit requirements are: 1) Monitoring and Reporting Protocol and *Quality Assurance Project Plan* (QAPP) for the Installation and Operation of a Meteorological Monitoring Station at the Rosemont Copper Project (Trinity Consultants, Inc, 2018a); and 2) Monitoring and Reporting Protocol and *Quality Assurance Project Plan* (QAPP) for the Installation and Operation of a PM₁₀ Monitoring Station at the Rosemont Copper Project (Trinity Consultants, Inc., 2018b). This Plan also summarizes the details of these QAPPs, such as station audit requirements, along with their submittal (timing) requirements.

In addition to Permit related monitoring and reporting requirements, the following applicable Forest Service mitigation measures are also related to air quality issues associated with the Project:

- OA-AQ-01: Paving of mine related roads to reduce dust emissions. This mitigation measure includes paving the Primary Access Road as well as select service roads within the Plant Site area. See pages B-76 and B-77 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-02: Dust control for unpaved roads. This mitigation measure follows the Dust Control Plan found in Appendix D of the current air quality control permit (ADEQ, 2018a) for fugitive dust control on unpaved roads at the main Project site as well as separate dust control permits/dust control provisions associated with locations removed from the main Project site. See page B-77 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-03: Dust control for open areas and storage piles. This mitigation measure follows the Dust Control Plan found in Appendix D of the current air quality control permit (ADEQ, 2018a) for fugitive dust control on open areas and storage piles at the Main Project site. See page B-78 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-04: Control of particulate emissions from lime slaking process. This mitigation measure refers to the reduction of particulate matter emissions associated with the lime slaking process. See pages B-78 and B-79 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-05: Control of particulate emissions from major metallic mineral processing operations. This mitigation measure refers to the reduction of particulate matter emissions associated with the ore processing operations. See page B-79 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-08: Reduction in air emissions from diesel engines associated with stationary equipment. This mitigation measure requires the use of low-sulfur diesel. See page B-81 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-09: Reduction in air emissions from diesel engines associated with mobile sources (haulage equipment, etc.). This mitigation measure requires the use of Tier 4 EPA compliant engines on select equipment. See pages B-81 and B-82 in Appendix B of the FEIS (USFS, 2013).
- OA-AQ-11: Opacity monitoring. This mitigation measure covers opacity monitoring requirements as outlined in the current air quality control permit (ADEQ, 2018a). See pages B-82 and B-83 in Appendix B of the FEIS (USFS, 2013).
- RC-AQ-01: Transporting employees in natural gas powered busses to reduce NOx emissions. This mitigation measure covers the implementation of a carpooling plan (buses) to transport employees "and contactors" (to the extent practicable) to and from the Project site. Employee buses shall be powered by natural gas. See page B-91 in Appendix B of the FEIS (USFS, 2013) and the *Transportation Reduction Plan* (MPO Volume II-z).
- Mitigation Measure FS-PHS-01 covers the installation of a perimeter fence designed to keep the public from coming in contact with the mining operations. This fence will also serve as a monitoring boundary associated with the current air quality control permit (ADEQ, 2018). The Permit (ADEQ, 2018a) calls for a *Public Access Restriction Plan* (MPO Volume II-u) to be developed and implemented, of which fencing is a part. See pages B-68 and B-67 in Appendix B of the FEIS (USFS, 2013).
- Mitigation Measure FS-BR-27 involves the periodic validation and rerunning of a groundwater model throughout life of mine. This measure also refers to the operation of two meteorological monitoring stations, one of which would be associated with the current air quality control permit (ADEQ, 2018a). See pages B-53 through B-55 in Appendix B of the FEIS (USFS, 2013) and the *Groundwater Model Update Plan* (MPO Volume II-m).

Mitigation Measures OA-AQ-06, OA-AQ-07, and OA-AQ-10 are not applicable to the Barrel Alternative selected in the FEIS (USFS, 2013).

1.2 PLAN DESCRIPTION

The remainder of this Plan includes the following sections:

- Section 2.0: Air Quality Compliance Plan Summary Table;
- Section 3.0: Closure and Bond Release;
- Section 4.0: Adaptive Management;
- Section 5.0: Data Management; and
- Section 6.0: References.

2.0 AIR QUALITY COMPLIANCE PLAN SUMMARY TABLE

Table 1 below shows the applicable (general) requirements from the Permit (which includes the *Dust Control Plan*), *Dry Tailings Management Plan* (DTMP, MPO Volume IV-h), the *Visible Observation Plan* (VOP, MPO Volume IV-u), and the PM₁₀ and Meteorological Station *Quality Assurance Project Plans* (QAPPs; Trinity Consultants, Inc., 2018a, b). These requirements demonstrate the continuous compliance of the Project and its operations. Table 2 shows the applicable Mitigation Measures from Appendix B of the FEIS (USFS, 2013) with regard to air issues.

Table 1 - General Permit Conditions

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Air Quality Permit #67001 Attachment "A" – General Provisions							
Permit Renewal (i.e., permit issuance date = April 24, 2018; permit renewal date = April 23, 2023)	Submit renewal application at least 6 months, but not more than 18 months, prior to permit expiration date.	4					X
Permit Renewal/ Termination	Submit a revision application/ termination of permit prior to facility update/cessation of operations	4					X
Posting of Permit	Post Permit at facility in such a manner as to be visible and accessible. Complete permit to be kept onsite	5		X			
Fee Payment	Payment of all application submittal/ processing and annual fees	5					X
Annual Emissions Inventory Questionnaire	Due by March 31st or 90 days after the Director makes the inventory form available each year	5				X	X
Semi-annual Compliance Certification <u>Compliance Periods:</u> Oct 1 – Mar 31 Apr 1 – Sept 30	Describes the compliance status of the source with respect to each permit condition Due May 15 th Due November 15 th	5, 12				X	X
Semi-annual Outstanding Compliance Schedules Apr 25 – Oct 24 Oct 25 – Apr 24	When subject, progress reports of returning source to compliance Provide within about 15 days by Nov 15 by May 15	6				X	X
Permit Revision Pursuant to Section 112(d) of the Clean Air Act	Submit revision application within 12 months of promulgated standard	6					X
Accidental Release Program	When subject, comply with timelines in 40 CFR Part 68	6					X

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Excess Emissions Notification	Within 24 hours of discovery	7				X	X
Detailed Report on Excess Emissions	Within 72 hours of the notification	7				X	X
Notification of upset conditions (i.e., malfunction of pollution control equipment, continuous monitoring systems, or continuous opacity monitoring systems)	Within two working days of discovery	8				X	X
Notifications of other types of deviations (other than a malfunction of pollution control equipment, continuous monitoring systems, or continuous opacity monitoring systems)	Every six months (coincident with semi-annual compliance certifications)	8				X	
Emergency Provisions: Exceedance of emissions limitation due to emergency	Within two working days of exceedance	8, 9	X	X		X	X
Excess emissions or permit deviation that cannot be corrected within 72 hours	Submit a compliance schedule within 21 days of such occurrence.	9					X
Malfunctions, Startup, Shutdown Affirmative Defense	Report and demonstrate affirmative defense per permit conditions	9 - 11	X	X		X	X
Monitoring Records	Keep all records of required monitoring per permit condition	12		X			
Records retention	Retain records and supporting information at least five (5) years from date of creation	12		X			
Duty to Provide Information	Submit information and copies of records requested by Director. Confidential information shall be justified and submitted separately	12					X
Permit Amendment or Revision	Apply for permit amendment or revision per Permit	12					X
Facility Changes without a Revision	Maintain log of changes or Submit notification to Director	13, 14		X		X	X
Copy of all Facility Change Logs	Submit to Director within 30 days after permit issuance anniversary date	15				X	X

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Testing Requirements	Conduct performance tests under conditions as stated in Permit	15			X		
Test Plan	Submit test plan to Director at least 14 days prior to test	15					X
Test Results	Submit test results report within 30 days after performance test	16				X	X
NSPS/ NESHAP	Comply with all applicable requirements in Subparts A	17		X		X	X
Air Quality Permit #67001 Attachment "B" – Specific Conditions for Facility Wide Requirements							
Opacity - Instantaneous Surveys	Method 9 certified Observer to conduct required instantaneous surveys, i.e. Method 22	18	X	X		X	X
Opacity – Six-Minute Observations	Determined by EPA Reference Method 9	18	X	X		X	X
Operating Limitations - Visual Observation Plan (VOP)	Comply with approved VOP	18	X	X		X	X
Operating Limitations	Maintain and operate all equipment identified in Attachment "C" per manufacturer's instructions or O&M Plan	18	X	X			
Operating Limitations	Preventative maintenance checks per O&M or manufacturer's instructions	18	X	X			
Operating Limitations – Dust Control Plan	Control particulate matter per Dust Control Plan requirements	19, App D	X	X			
Operating Limitations – Mined Rock	Limit waste rock and ore to no more than 420,000 tpd (calendar day basis)	19	X	X			
Operating Limitations – Blasting	Limit ANFO used to no more than 250 tpd	19	X	X			
Operating Limitations – Odors	Shall not cause or permit odors from crossing property line	19	X	X			
Visibility Limiting Standard	Shall not cause or permit visible emissions beyond property boundary line. (Does not apply when wind speed exceeds 25 mph)	19	X	X			

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method		Page in Permit	Method(s) Used for Determining Compliance				
				Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Monitoring, Recordkeeping and Reporting	Records of instantaneous survey of visible emissions from process stack and fugitive sources		20	X	X			
	Records of six-minute observation if survey results exceed applicable standard		20	X	X			
	Keep Records of ANFO in tons used during each blast no later than 5pm next business day		20	X	X			
	Record total tons of all daily rock mined (ore and waste rock) no later than 5pm next business day		21	X	X			
	Maintain onsite records of manufacturer's specifications or O&M Plan		21		X			
	Retain records for a period of at least five (5) years and keep most recent two (2) years of data on-site		21		X			
	Conduct daily visible emissions survey at fugitive dust operations within 300 feet of property boundary line		21	X	X			
	Summary Reports of all monitoring <i>Monitoring Periods:</i> Oct 1 – Mar 31 Apr 1 – Sept 30	Identify all required monitoring activities, deviations and corrective actions taken for any deviations. (report on same schedule as compliance certifications)	21				X	X
	Notify Director in writing within 30 days of purchasing equipment listed in Attachment "C"		21				X	
NSPS Subpart LL Equipment – Emission Limitations and Control Requirements	Construction notification postmarked no later than 30 days after such date		21, 22					X
	Initial notification of actual date of startup within 15 days after such date		22					X
	Opacity observation notification postmarked not less than 30 days prior to such date		22	X				X
	General NSPS Equipment best practices operating requirements		22	X	X	X	X	

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
NSPS Subpart LL Equipment – Emission Limitations and Control Requirements (continued)	Limit stack emissions to 0.05g/dscm after performance test	22	X	X	X	X	
	Limit process equipment emissions from AE-001 thru AE-005, AE-009 and AE-011 thru AE-015 per Table 1: Emission Limits. Compliance with these limits shows compliance with the 0.05g/dscm limit	22 - 24	X	X			
	Install, maintain and operate cartridge filter dust collectors AE-001 thru AE-005, AE-009 and AE-011 thru AE-012 at all times per Permit	24 - 25	X	X			
NSPS Subpart LL Equipment - Control Requirements	Install, maintain and operate at all times scrubber AE-013 per Permit	26	X	X			
	Install, maintain and operate cartridge filter dust collector AE-014 during material transfer per Permit	26	X	X			
	Install, maintain and operate scrubber AE-015 at all times per Permit	26	X	X			
	As needed, minimize material accumulated around process equipment that contributes to PM ₁₀ emissions	26	X	X			
	Install, maintain and operate water sprays when unloading ore to primary crusher hopper per Permit	26	X	X			
	Install controls to minimize fugitive emissions at material transfer points	26	X	X			
NSPS Subpart LL Equipment - Monitoring, Recordkeeping, and Reporting	Install, calibrate, maintain and operate a device to monitor scrubber operating pressure in AE-013	26, 27	X				
	Install calibrate, maintain and operate a device to monitor scrubber operating flow rate in AE-013	27	X				
	Weekly record scrubber pressure and flow rate. Submit semi-annual reports when values fall outside +/- 30% of last performance test	27	X	X		X	
	Determine pressure loss of gas stream and liquid flow rate through Scrubber AE-013 at any time during PM performance test	27	X	X			

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
NSPS Subpart LL Equipment - Monitoring, Recordkeeping, and Reporting (continued)	Continuously measure and record electrostatic precipitator primary & secondary voltage	27	X	X			
NSPS Subpart LL Equipment – Testing Requirements	Initial performance test within 60 of max production but no later than 180 days after initial startup. Annual tests thereafter.	27	X	X	X		
NSPS Subpart LL Equipment – Opacity	After performance test and at all times except as stated in Permit, limit opacity to 7% opacity from any stack except AE-013	28	X	X			
	60 days after max production levels, but no later than 180 days after initial startup, limit process fugitive emissions to 10% opacity at all times except as stated in Permit.	28	X	X			
	Limit wet scrubber (AE-013) opacity to 20%	28	X	X			
	Weekly visual surveys of dust collector stacks and process fugitive emissions	29	X	X			
Non-NSPS Subpart LL Mineral Processing Equipment	Maintain material handling equipment daily process rates and hours of operation	29	X	X			
	Do not cause, allow or permit discharge of particulate matter into atmosphere in any one hour from any process source	29, 30	X				
	As needed, minimize material accumulated around process equipment that contributes to PM ₁₀ emissions	30	X	X			
	Install controls to minimize fugitive emissions at material transfer points	30	X	X			
	Install, operate and maintain cartridge filter dust collector LDC1/C2/C3 at all times per Permit	30	X	X			
	Limit opacity from any process sources to 20%	31	X	X			
	Weekly visual surveys	31	X	X			

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
NSPS Subpart IIII Emergency Engines (General Requirements)	Install engines that meet 2007 standards	31	X	X			
	Maintenance checks and readiness testing is limited to 100 hours/yr. Non-emergency use is limited to 50 hours per year.	31, 32	X	X			
	Limit opacity during cold start or loaded operation to no more than 60% per Permit	32	X	X			
NSPS Subpart IIII Emergency Engines (Operating Requirements)	Only operate any emergency engine for emergency, maintenance and testing. (Limit of 50 hours for non-emergency use)	32	X	X	X		
	Install non-resettable hour meter prior to initial startup. Operate engine per manufacturer's instructions.	32	X	X			
	Maintain compliance per manufacturer's specifications, engine settings as allowed and applicable Permit requirements	32	X	X	X		
NSPS Subpart IIII Emergency Engines (Emission Limitations & Standards)	Limit diesel fuel sulfur content and comply with EPA engine emission limitations and standards	33 - 35	X	X			
	For emergency engines not meeting applicable standards, keep records of engine operation mode recorded through hour meter (emergency vs non-emergency)	35		X			
	Record date, start and stop times for engine operation and reason for operation.	35	X				
Fugitive Dust Requirements (Emission Limitations & Standards)	Comply with visible opacity limitation of 40% from fugitive dust non-point sources per Permit	35	X				
	Comply with visible opacity limitation of 20% from fugitive dust point sources per Permit	35	X				

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Fugitive Dust Requirements (Emission Limitations & Standards) (continued)	Employ reasonable precautions and good modern practices to prevent excessive airborne particulate matter from all open areas and roadways.	35, 36	X	X			
	Employ reasonable precautions to prevent airborne dust during transport of and material transfer operations	36, 38	X	X			
	Operate equipment at storage piles with minimum fall of material. Operate mineral tailings piles to prevent excessive airborne PM	36 - 38	X				
	Total length of operational unpaved service and haul roads shall not exceed permit parameters	37	X	X			
Fugitive Dust Requirements (Air Pollution Control)	Comply with paving of entrance road and light duty roads	37	X	X			
	Water, or an equivalent control, shall be used to control visible emissions from haul roads and storage piles	37	X	X			
	Comply with dust control measures in Dust Control Plan	37	X	X			
	Restrict traffic to treated areas. Immediately clean up rock spills and avoid diverting of traffic	37	X				
	Comply with approved Dry Tailings Management Plan (DTMP) and operational requirements and recordkeeping as directed	37 – 39, App F	X	X		X	X
	When wind speeds are at or above 15 mph and gusts are at or above 20 mph, inspect tailings area at least once daily for easily erodible areas	38	X	X			
	Review and determine effectiveness of Dry Tailings Management Plan by January 31	39, App F					X
Fugitive Dust Requirements (Monitoring & Recordkeeping)	Maintain records of dates when identified fugitive monitoring activities and control measures were utilized	36		X			
	Every week conduct instantaneous surveys of fugitive sources, except mineral tailings	38	X				

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Fugitive Dust Requirements (Monitoring & Recordkeeping) (continued)	Weekly opacity Monitoring of tailings conveyor system (Max. opacity = 20%)	38	X	X			
	Twice daily, conduct visible emissions surveys of mineral tailings starting from the day the buttress construction starts	38	X	X			
	When wind speeds are at or above 15 mph and gusts are at or above 20 mph, maintain all meteorological data, all tailings inspections, all control measures and corrective actions taken	39		X		X	
	Maintain a copy of watering schedules	39		X			
Gasoline Storage Tanks and Dispensing	Install and operate per industry, ADEQ and EPA standards and/or guidelines	40	X	X			
	Maintain readily available, monthly throughput records. Maintain vapor pressure and temperature records as/when required.	40, 41	X	X			
Storage Tanks	Limit odors from diesel storage tanks to prevent air pollution	42	X	X			
Mobile Source Requirements	Take reasonable precautions before cleaning material from a site, roadway, alley	43	X	X			
Mobile Sources	Maintain records of maintenance activities on mobile sources	43		X			
Periodic Activities	Limit emissions from operations such as abrasive blasting, paint use, spray painting per Permit	43, 44	X	X			
	Opacity limited to 20% at all times from blasting and painting operations	43, 45	X	X			
	Maintain records showing start/ end dates and controls used during blasting activities	44	X	X			
	Maintain records of Safety Data Sheets, amount of paint and controls per Permit	45	X	X			
	Maintain records showing compliance with all Demolition/Renovation activities	46	X	X			
* Develop Public Access Restriction Plan	Submit plan at least 90 days prior to beginning construction of the mine	46					X
* Implement Public Access Restriction Plan	Within 30 days after approval of Director of ADEQ	46	X	X		X	

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Dust Control on Haul Roads	Record precipitation/evaporation, traffic volume, material tons moved, water usage and dust suppressant usage and application frequency	App D	X	X			
Ambient Monitoring <i>Meteorological (MET) and PM₁₀ Stations QAPPs</i> (General Requirements)	Maintain written and ADEQ approved Quality Assurance Project Plans (QAPP), including PM ₁₀ monitor prior to ambient air monitoring	46, 48 - 50	X				X
	Retain records of all monitoring and make data available to ADEQ upon request	46	X	X			
	Submit quarterly/annual reports of quality assurance information to ADEQ. Fourth quarter shall include the annual QA/QC data	46, 47, 50	X	X		X	X
	Submit reports within timeframes and per requirements described in Permit	47					X
Ambient Monitoring <i>(MET & PM₁₀)</i>	Comply with approved QAPPs, install MET station & PM ₁₀ monitor at least 90 days prior to start-up of mine operations (pit excavation).	47 - 49	X	X	X	X	X
	Operate monitors continuously, collecting hourly data except during maintenance, malfunctions	48, 50					
	Repair malfunctions as soon as possible. Resume monitoring as soon as practicable. Submit report and reasons for malfunction within 24 hours. Notification within 5 business days of non-correction.	48, 50	X	X		X	
	Conduct QA activities per the MET & PM ₁₀ QAPP	48, 50	X	X	X		
	Upon ADEQ notification, participate in ADEQ technical system and performance audits	48, 51	X	X	X		
	Provide electronic report summarizing MET data measurements per Permit. Provide data as required	48, 51		X			X
	Calculate monitored daily average PM ₁₀ value	49	X	X		X	

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Ambient Monitoring (MET & PM ₁₀) (continued)	Report exceedances of PM ₁₀ monitoring Alert Level and submit report within 30 days per Permit, including corrective measures/actions	49	X				X
	Submit a report to ADEQ seventy (70) days after proposed PM ₁₀ monitoring corrective actions are in place with recommendations on dust control plan revisions	50					X
	Provide demonstration on reasons/sources for PM ₁₀ Alert Level exceedance	50	X				X
Ambient Monitoring (PM ₁₀ Monitoring QA/QC)	Conduct monthly flow checks on monitoring equipment during first half of every calendar month	50	X	X	X		
	Semi-annual performance audits of monitoring equipment conducted by an independent qualified auditor.	51	X				
	Triennial technical audits of the PM ₁₀ air monitoring program by an independent qualified auditor.	51	X			X	
Ambient Monitoring (PM ₁₀ Monitoring Reporting)	Calculate quarterly, annual summary statistics, and the precision and accuracy statistics, including 24-hr average concentrations per the Permit	51	X	X		X	
	Valid data recovery shall meet EPA minimum 75% data completeness	51	X	X		X	
	Submit to ADEQ, report summarizing meteorological data measurements per Permit	51	X	X		X	
Visual Observation Plan (VOP)	Comply with VOP as required by Permit	18	X	X		X	
	Opacity and Visual Observation Requirements	VOP, 2	X	X		X	
	Visual observation locations' description	VOP, 4	X				
	Visible Emission Observation Methodology	VOP, 5	X	X		X	

Applicable Requirement	Summary of Requirement/Description of Any Reference Test Method	Page in Permit	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal
Visual Observation Plan (VOP) (continued)	Fugitive Dust Observations in Pit and Plant Areas	VOP, 6	X	X		X	
	Fugitive Dust Observations Near the Property Boundary	VOP, 7	X	X		X	
	Mineral Tailings Area Fugitive Lookout Points	VOP, 9	X	X			
	Tables identifying emission units for visual observations, visual observation points and fugitive lookout points	VOP, Tables 1 – 4; App B, G & I	X				X
	Example Observation Forms	App A, D – F, H & J	X	X			X
	Maps showing observation and lookout point locations	App B, G & I	X				X

* = Perimeter fencing associated with this requirement is also associated with Mitigation Measure FS-PHS-01;
App = Appendix; tpd = tons per day; mph = miles per hour, O&M = operations and maintenance

Table 2 - Mitigation Measure Conditions

Mitigation Measure	Title of Mitigation Measure	Page in FEIS	Method(s) Used for Determining Compliance				
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal ¹
Applicable Mitigation Measures provided in Appendix B of FEIS							
OA-AQ-01	Paving of mine related roads to reduce dust emissions	B-76, B-77	Weekly (during construction/repair activities) to ensure construction requirements are met. Monthly visual observations and Quarterly detailed inspections to ensure road maintenance is performed in a timely manner. Monitoring requirements included in <i>Comprehensive Transportation Plan</i> .	X		Construction specifications not met - report within 24 hours to Forest Service Quarter report	Weekly inspections summarized in quarterly reports; Monthly visual observations and quarterly inspections summarized in quarterly reports to Forest Service
OA-AQ-02	Dust control for unpaved roads (includes haul roads and other non-paved vehicle access roads around the Project area)	B-77	See the Dust Control Plan in the Air Quality Control Permit and the Dry Tailings Management Plan	X		ADEQ semi-annual report	Inspections summarized in semi-annual reports copied to Forest Service
OA-AQ-02	Dust control is required in a Town of Sahuarita Right of Way, Pima County Air Activity Permit will ensure requirements are met	B-77	Fugitive dust must not cross the property line	NA	NA	NA	No specific record keeping or reporting is required.
OA-AQ-03	Dust control for open areas and storage piles	B-78	See the Dust Control Plan in the Air Quality Control Permit and the Dry Tailings Management Plan	X		ADEQ semi-annual report	Inspections summarized in semi-annual reports copied to Forest Service
OA-AQ-04	Control of particulate emissions from lime slaking process	B-78, B-79	Certification (prior to use) by testing pollution control equipment and then maintenance records per the Air Quality Control Permit. System construction to meet specifications.	X	X	ADEQ semi-annual report	Maintenance records summarized in semi-annual reports copied to Forest Service
OA-AQ-05	Control of particulate emissions from major metallic mineral processing operations	B-79	Certification (prior to use) by testing pollution control equipment and then maintenance records per the Air Quality Control Permit. System construction to meet specifications.	X	X	ADEQ semi-annual report	Maintenance records summarized in semi-annual reports copied to Forest Service

¹ Reports that are submitted to ADEQ, for compliance with the Air Quality Control Permit, will also be shared as needed with the Forest Service, as noted in the "OA-AQ" Mitigation Measures (USFS, 2013).

Mitigation Measure	Title of Mitigation Measure	Page in FEIS	Method(s) Used for Determining Compliance					
			Monitoring	Recordkeeping	Testing	Reporting	Other Submittal ¹	
OA-AQ-08	Reduction in air emissions from diesel engines associated with stationary equipment	B-81	Purchase engines with emissions guaranteed by the manufacturer. Maintain engine per the Air Quality Control Permit.	X			ADEQ semi-annual report	Maintenance records (as required) summarized in semi-annual reports copied to Forest Service
OA-AQ-09	Reduction in air emissions from diesel engines associated with mobile sources (haulage equipment, etc.)	B-81, B-82	Certification (prior to use) by purchasing mobile sources with engine emissions guaranteed by the manufacturer. Maintain sources per the manufacturer. Maintenance records per the Air Quality Control Permit.	X			ADEQ semi-annual report	Maintenance records (as required) summarized in semi-annual reports copied to Forest Service
OA-AQ-11	Opacity monitoring	B-82, B-83	See the <i>Dust Control Plan</i> in the Air Quality Control Permit, the <i>Visual Observation Plan (VOP)</i> , and the <i>Dry Tailings Management Plan</i>	X			ADEQ semi-annual report	Inspections summarized in semi-annual reports copied to Forest Service
RC-AQ-01	Transporting Employees	B-91	Implement carpooling plan for majority of employees. (natural gas buses). See the <i>Transportation Reduction Plan</i> .	X			Annual report	Carpooling summarized in annual report to the Forest Service
FS-PHS-01	Construction of a perimeter fence that would exclude the public	B-68, B-69	Ensure location and construction techniques comply with MPO. See the <i>Public Access Restriction Plan</i> also required by ADEQ	X			Annual report	Inspection of fence summarized in annual report to the Forest Service

MPO = Mine Plan of Operations

3.0 CLOSURE AND BOND RELEASE

This section addresses closure activities associated with this Plan as well as the approach for funding of those activities and bond release of those funds. If bonding is set for one year or less (i.e., simply completing test work or finalizing reporting) no bond release is proposed. For longer periods, the bonding terms and application for bond release, as well as the mechanism for that release, are included.

Because this is an 'other agency' permit requirement, with periodic permit amendments and updated permit conditions, no specific closure bonding is included in this Plan.

3.1 INTERIM CLOSURE

This permit is a Class II air quality control permit issued under the unitary permitting authority and therefore is an installation and operating permit valid only for Rosemont Copper Company. In order for the Forest Service to perform earthmoving activities, an Air Activity Permit may be necessary. This is an on-line permit that is available for a specific period not exceeding 12 months. It is assumed in the bonding calculation that an Air Activity Permit will be necessary for a period of 3 years so this amount is included in the bonding estimate.

3.2 FINAL CLOSURE

There are no final closure activities associated with this measure.

3.3 BOND RELEASE

There is no bonding associated with this measure.

4.0 ADAPTIVE MANAGEMENT

Rosemont will incorporate the adaptive management process into the implementation of the Mitigation Measures associated with this *Air Quality Compliance Plan* and Air Quality Control Permit No. 67001 (ADEQ, 2018a). This process will ensure that the most practicable compliance measures are utilized and that the intent of ADEQ (2018) is being met. The three key general components of adaptive management are:

- Testing assumptions – collecting and using monitoring data to determine if current assumptions are valid;
- Adaptation – making changes to assumptions and monitoring program to respond to new or different information obtained through the monitoring data and project experience; and
- Learning – documenting the planning and implementation processes, its successes and failures for internal learning.

Elements that may be modified as part of the adaptive management process for this Plan include, but are not limited to, the following:

- Inclusion and implementation of improved methods/techniques for compliance.

Although not required by the Air Quality Control Permit, but in order to remain consistent with other requirements at the Project, Rosemont will review this *Air Quality Compliance Plan* annually. This annual review will be conducted to ensure that the implementation of this Plan is effective in maintaining “continuous” compliance at the Project. As a note, a review of the *Dry Tailings Management Plan* (DTMP, MPO Volume IV-h) is required annually for its effectiveness in controlling fugitive emissions (see page 39 of 58 of the Permit; ADEQ, 2018a).

If the review of this Plan shows ineffectiveness in maintaining compliance, a revised Plan will be prepared no later than April 1st following the annual review (timing to be consistent with the DTMP, MPO Volume IV-h). The revised Plan should show improved methods/techniques for compliance in order to minimize or prevent further non-compliance with the Permit or any associated documents. The annual review shall take into account the following:

- Methods, recordkeeping and monitoring frequencies that were most effective in maintaining compliance;
- Past non-compliance issues (if any) and the circumstances that led to non-compliance;
- Corrective actions that should be implemented;
- Latest industry innovations, training and or improvements that may be utilized by Rosemont; and
- Changes to the Air Permit by ADEQ.

There are no established United States Environmental Protection Agency (USEPA) or ADEQ guidelines as to how an ‘air compliance monitoring plan’ should be structured. However, Rosemont must be able to demonstrate “continuous compliance” at any moment in time. This does not imply that there must be continuous emissions monitoring equipment (CEMs) installed. Nevertheless, there should be a system of evaluating compliance such that those emissions monitoring parameters that constitute part of the system are adequate in providing a reasonable assurance of compliance.

The 'air compliance monitoring plan' should identify the most direct method of monitoring emissions. When direct emission measurements are not feasible, Rosemont will focus on monitoring the parameter that is most reflective of the performance of the emission process or controls. Parameters to be monitored and frequencies will be at the level of effort that is in scale with the emission process or control.

Section 2.0 of this Plan presents a summarized table format of the pertinent requirements.

5.0 DATA MANAGEMENT

All records will either be kept in hardcopy format or electronically and will be readily available for inspection by ADEQ personnel or other authorized agencies as needed, such as the Forest Service. These records will be used as a basis of reporting, compliance verification and submitting all required Permit and Plan reports. Rosemont will maintain all records generated to demonstrate compliance as follows.

In Attachment “A”, Condition XIII.B on page 12 of 58 of the Permit, the following statement is made concerning document retention.

The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentations, and copies of all reports required by the permit.

Also in Attachment “B”, Condition II.A.4.g on page 21 of 58 of the Permit, the following statement is made concerning document retention.

All records, analyses, and reports required by this permit shall be retained for a minimum of five years from the date of generation. The most recent two years of data shall be kept on-site. All records shall be made available for inspection by authorized department personnel during normal working hours.

6.0 REFERENCES

ADEQ, 2018a. Air Quality Class II Synthetic Minor Permit #67001 for the Rosemont Copper Project. April 24, 2018.

2018b. Air Quality Class II Synthetic Minor Permit #67001 Administrative Amendment #71731 for the Rosemont Copper Project. June 5, 2018.

Trinity Consultants, Inc, 2018a. *Monitoring and Reporting Protocol and Quality Assurance Project Plan (QAPP) for the Installation and Operation of a Meteorological Monitoring Station at the Rosemont Copper Project*. January 2018.

2018b. *Monitoring and Reporting Protocol and Quality Assurance Project Plan (QAPP) for the Installation and Operation of a PM₁₀ Monitoring Station at the Rosemont Copper Project*. January 2018.

USFS, 2013. *Final Environmental Impact Statement for Rosemont Copper Project, Appendix B Mitigation and Monitoring Plan*. December 2013.

2017a. *Errata – Rosemont Copper Project Final Environmental Impact Statement*. April 26, 2017.

2017b. *Record of Decision – Rosemont Copper Project and Amendment of the Coronado Land and Resource Management Plan*. June 2017.