

Dry Tailings Management Plan

As Required By: Air Quality Control Permit No. 67001

June 2018

Prepared by:

Rosemont Copper Company

HUDBAY

5255 E. Williams Circle
Suite 1065
Tucson, Arizona 85711-7407
tel 520-495-3500
Hudbayminerals.com

Monitoring and Reporting Schedule

<i>Task Schedule</i>	<i>Purpose/Description/ Timing</i>	<i>Permit Pg. No.</i>	<i>Generic Year</i>				
			<i>D</i>	<i>W</i>	<i>AN</i>	<i>SA</i>	<i>A</i>
Permit Renewal (i.e., permit issuance date = April 24, 2018; permit renewal date = April 23, 2023)	Submit application for renewal at least 6 months, but not more than 18 months, prior to the date or permit expiration	4			X		
Annual Emissions Inventory Questionnaire	Due by March 31 st or 90 days after the Director makes the inventory form available each year	5					X
Semiannual Compliance Certification (period from October 1 st to March 31 st)	Describes the compliance status of the source with respect to each permit condition; due by May 15 th	5, 12				X	
Semiannual Compliance Certification (period from April 1 st to September 30 th)	Describes the compliance status of the source with respect to each permit condition; due by November 15 th	5, 12				X	
Summary report of all monitoring activities	Submit for same timeline and on same schedule as compliance certification	21				X	
Semiannual Outstanding Compliance Schedule (period from April 25 th to October 24 th)	Progress report on outstanding compliance schedules; provide within about 15 days, i.e. by November 15 th	6				X	
Semiannual Outstanding Compliance Schedule (period from October 25 th to April 24 th)	Progress report on outstanding compliance schedules; provide within about 15 days, i.e. by May 15 th	6				X	
Excess emissions notification	Within 24 hours of discovery	7			X		
Detailed report on excess emissions	Within 72 hours of the notification	7			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		

Task Schedule	Purpose/Description/ Timing	Permit Pg. No.	Generic Year				
			D	W	AN	SA	A
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	
Exceedance of emissions limitation due to emergency	Within two working days of exceedance	8, 9			X		
Excess emissions or permit deviation that cannot be corrected within 72 hours	Submit a compliance schedule to the Director within 21 days of such occurrence	9			X		
Records retention	Retain records of required monitoring for a period of at least five (5) years from date of record	12			X		
* Visual Observation Plan (VOP)	Comply with approved VOP	18			X		
Dust Control Plan	Comply with approved Dust Control Plan	19, App D			X		
Records retention and availability	Retain records per permit for a period of at least five (5) years and keep most recent two (2) years of data on-site	21			X		
Summary report of all monitoring activities	Submit for same timeline and on same schedule as compliance certification	21				X	
Opacity Monitoring of Dry Stack Tailings Facility (start during buttress construction)	Twice daily (Max. opacity = 40%)	38	X				
Opacity Monitoring of tailings conveyor system	Weekly (Max. opacity = 20%)	38		X			
Operational unpaved roads	Record lengths of unpaved service roads or unpaved haul roads	37			X		
* General monitoring and dust control	Record activities	35, 36, 38			X		
Dry Tailings Management Plan (DTMP)	Comply with approved Plan	37			X		
Review of Dry Tailings Management Plan (DTMP)	Determine effectiveness in controlling emissions; by January 31 st	39					X

Task Schedule	Purpose/Description/ Timing	Permit Pg. No.	Generic Year					
			D	W	AN	SA	A	
Inspect tailings area at least once daily during period of high winds for easily erodible areas	Winds at or above 15 mph or gusts at or above 20 mph (as recorded at the Meteorological Station or other appropriate location)	39	X					
Record all meteorological data, all tailings inspections, all control measures used and corrective actions	Winds at or above 15 mph or gusts at or above 20 mph (as recorded at the Meteorological Station or other appropriate location)	39			X			
Water used for dust control	Record per shift basis	39, App D.7.3	X					
* Develop Public Access Restriction Plan	Submit plan at least 90-days prior to construction of the mine	46			X			
* Implement Public Access Restriction Plan	Within 30 days after approval by Director of ADEQ	46			X			
Meteorological Monitoring Station Quality Assurance Project Plan (QAPP)	Comply with approved QAPP	47			X			
Meteorological Monitoring Station	Install station within 90 days prior to startup of mine operations (i.e., pit excavation)	48			X			
PM ₁₀ Monitoring Station QAPPP	Comply with approved QAPP	49			X			
PM ₁₀ Monitoring Station	Install station within 90 days prior to startup of mine operations (i.e., pit excavation)	49			X			
** 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			

D = Daily; W = Weekly; AN = As Needed; SA = Semi-annually; A = Annually; VOP = Visual Observation Plan; * = Including, but not specific to, dry stack tailings area; ** = Haul road monitoring requirements depend on method selected; App = Appendix; Note: All submittals require a certification of truth, accuracy, and completeness (see page 6 of Permit).

Revision Log

<i>Revision Number</i>	<i>Revision Lead</i>	<i>Purpose of Revision</i>	<i>Revision Date</i>
0	DK	(1) Removed appendices (only made reference to Dust Control Plan and Visual Observation Plan); (2) Included statement regarding 45-day period to update plan following permit issuance following a renewal; (3) Updated text regarding vehicles speeds; and (4) Fixed section reference on page 13.	01/2018
1	Rosemont	Based on issuance of air quality control permit No. 67001 from ADEQ	June 2018
2	Rosemont	References to applicable sections in air quality control permit No. 67001 corrected in text.	June 2018

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1.0 PLAN OBJECTIVE AND DESCRIPTION

This *Dry Tailings Management Plan* (Plan) was developed as a requirement in the Arizona Department of Environmental Quality (ADEQ) Class II Air Quality Control Permit No. 67001 (Permit, Air Quality Control Permit) issued to the Rosemont Copper Company (Rosemont) for the Rosemont Copper Project (Project) on April 24, 2018 (ADEQ, 2018a) [see Attachment "B", Conditions VI.B.1.e.(5)(a) and (b) on pages 37 and 38 of 58 of the Permit]. Minor corrections to the *Dust Control Plan* (Appendix D of the Permit) were made following issuance (Administrative Amendment No. 71731 [ADEQ, 2018b]).

Air Quality Control Permit No. 67001 is a Class II synthetic minor permit. The Rosemont 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.

This version of the Plan is an update to the *Dry Tailings Management Plan* developed as part of Air Quality Control Permit No. 55223, which was originally issued to Rosemont for the Project on January 31, 2013 (ADEQ, 2013). Updates to this Plan will be made within 45 days of the issuance of permit renewals. Additionally, per Attachment "B", Condition VI.B.2.d.(3) on page 39 of 58 of the Permit, an annual review of the Plan is required for its effectiveness in controlling fugitive dust emissions.

This Plan is also part of a Mine Plan of Operations (MPO) submittal to the U.S. Forest Service (USFS, Forest Service). As such, any updates to this Plan will be shared with the Forest Service.

Monitoring under this Plan will begin once construction of the perimeter buttresses begins [see Attachment "B", Condition VI.B.2.c.(2) on page 38 of 58 of the Permit]. This time period is referred to as the Active Mining Phase. These buttresses are associated with the Dry Stack Tailings Facility (DSTF). Monitoring will be discontinued following final placement of tailings in the DSTF. Section 2.0 of this Plan provides a general description of the construction and operation of the DSTF.

1.1 PLAN OBJECTIVE

The objective of this Plan is to:

- Minimize the generation of fugitive dust from the tailings.

1.2 PLAN DESCRIPTION

The Plan is required to address the following operational requirements (note: list of requirements reordered) [see Attachment "B", Condition VII.B.1.e.(5)(b) on pages 37 and 38 of 58 of the Permit]:

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

Discussion of these four (4) operational scenarios is provided in Section 3.0 – Operational Dust Control Measures. As appropriate, the tailings conveyor system from the Tailings Filter Plant to the DSTF is included in these scenarios.

As needed, three (3) separate roadway dust control programs can be incorporated into the four (4) operational scenarios listed above. These roadway dust control programs were designed to ensure that at least a 90% control of PM₁₀ emissions is achieved on haul roads (see *Dust Control Plan*, Attachment "D" of the Permit). A 90% control of PM₁₀ emissions is considered sufficient to ensure that no greater than 40% opacity is measured for fugitive emissions generated from a non-point source (see Attachment "D" of the Permit, Section D.2.2).

For reference, and exclusive of the tailings conveyor system, the opacity limitation for activities associated with the DSTF is 40% (see Attachment "B", Condition VI.B.1.a. on page 35 of 58 of the Permit).

The opacity limitation for the tailings conveyor system drop points is 20% (see Attachment "B", Condition VI.B.1.b. on page 35 of 58 of the Permit).

Rosemont's Visual Observation Plan (VOP) specifies observation points, or Fugitive Lookout Points, where visible emission surveys are to be taken that are associated with the DSTF. Section 4.0 of this Plan summarizes the opacity monitoring procedures associated with the DSTF. Section 5.0 provides a list of general dust control methods. Section 6.0 summarizes the monitoring and reporting requirements. Sections 7.0 through 9.0 cover Adaptive Management, Data Management, and References, respectively.

However, with regard to meeting opacity limits, in Attachment "B", on page 19 of 58 of the Air Quality Control Permit, Condition II.A.3.a, states the following:

The Permittee shall not cause or permit the airborne diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions become airborne. Within actual practice, the airborne diffusion of visible emissions across property lines shall be prevented by appropriately controlling the emissions at the point of discharge, or ceasing entirely the activity or operation which is causing or contributing to the emissions.

This condition, however, shall not apply when wind speeds exceed twenty-five (25) miles per hour as estimated by a certified visible emissions evaluator (Certified EPA Method 9 Observer) using the Beauford Scale of Wind-Speed equivalents, or as recorded by a U.S. Weather Bureau Station or a U.S. military installation (see Attachment "B", Condition II.A.3.b. on page 19 of 58 of the Permit).

This exception does not apply to the demolition, destruction, transport, or pulverization of structures containing friable asbestos materials, and all dust-producing activities associated with such sources shall be halted when the wind is causing or contributing visible emissions to cross beyond the property lines within which the emissions discharge (see Attachment "B", Condition II.A.3.b. on pages 19 and 20 of 58 of the Permit).

Additionally, any disregard of, neglect of, or inattention to other controls required by the Air Quality Control Permit, during any time when this wind speed condition is in effect, shall automatically waive the exception and such relaxation of controls shall be a violation to the generation of airborne particulate matter from undisturbed land (see Attachment "B", Condition II.A.3.c. on page 20 of 58 of the Permit).

With regard to the *Dust Control Plan* mentioned above and referenced throughout this Plan, page 19 of 58 of the Permit, Attachment "B", Condition II.A.2.e. states the following:

The Permittee shall comply with the dust control plan included in Attachment "D" of this permit to control particulate matter emissions from activities identified in the dust control plan. The Permittee may implement proposed changes to the dust control plan upon submission to the Director if necessary to further minimize fugitive dust. Nothing in this permit prohibits the Permittee from implementing additional dust control measures not set forth in the dust control plan.

The VOP mentioned above not only includes observation points for the tailings facility (DSTF) but for the entire Project site itself. Observations will be conducted by a certified visible emissions evaluator (Certified EPA Method 9 Observer).

Visual observations of fugitive dust emissions have two distinctions: point source and non-point source. Point source fugitive emissions can be generated from stationary process sources that include pollution control equipment that generate process related stack emissions, including source fugitive emissions that are not collected by a capture system such as vent hoods and dust collectors. The second distinction, non-point source fugitive emissions, includes all other activities such as mobile sources and windblown fugitives.

If the instantaneous (EPA Method 22) opacity reading of any emission unit/source appears to exceed the applicable standard, a six-minute EPA Reference Method 9 observation of the plume is required "as soon as practicable". The observation points identified in the VOP may not necessarily be the observation points that will be used for conducting EPA Reference Method 9 observations. Since compliance with the EPA Reference Method 9 requires opacity to be viewed from specific distances and angles with the sun in a specific location relative to the observer, it is more than likely that the observer will need to relocate to a more appropriate position to conduct a Method 9 observation. If the specifics of the reference method can be met, the six-minute reading will be conducted as soon as practicable using a Method 9 visible emission observation form.

Regarding the visual observations, the protocol will be followed in accordance with the Permit in Attachment "B", Conditions II.A.4.c., II.A.4.c.(1), and II.A.4.c.(2) on page 20 of 58 (see VOP for observation and reporting requirements).

Additionally, the VOP includes locations near the property boundary. As specified on page 21 of 58 of the Permit, Attachment "B", Condition II.A.4.h. states the following:

The Permittee shall conduct a daily visible emissions survey at places where the facility fugitive dust generating activities are within 300 feet of the property boundary line in accordance with Condition II.A of this Attachment (Attachment "B"). When such emissions are observed to cross the property boundary line, the Permittee shall follow the excess emissions reporting procedures in Section XII of Attachment "A" of this permit. (see page 7 of 58 of the Permit)

Note: Section XII on page 7 of 58 of the Permit is titled "Excess Emissions, Permit Deviations, and Emergency Reporting".

2.0 GENERAL TAILINGS OPERATION

The Rosemont Project includes placement of tailings from the sulfide ore processing (grinding and flotation) circuit in a DSTF. Tailings slurry from the processing circuit is sent to a thickener tank and then to a tailings filter plant where the tailings are dewatered. Once dewatered, the filtered or “dry stack” tailings are then transported by conveyor and placed in the DSTF via a stacking system. Upon exiting the filter plant, the filtered tailings will have a moisture content (by dry weight) of 18% or less (ADEQ, 2015). After placement, dozers may be utilized to smooth the surface of the deposited tailings and prepare a working surface. Motor graders or other equipment may also be used to further flatten the tailings surface as needed to facilitate conveyor movement and operation.

The dry stack tailings, upon production start-up, will be placed behind a perimeter buttress constructed out of overburden and waste rock (non-ore materials) removed from the Open Pit and transported to the DSTF via haul trucks. Figure 1 provides a typical perimeter buttress section.

As noted, the buttress construction materials (waste rock) are transported to the DSTF via large haul trucks. The perimeter buttress is designed to accommodate two-way truck traffic and is approximately 150 feet wide at the crest. The waste rock is end-dumped in nominal 50-foot lifts. The waste rock is not compacted except by incidental compaction due to equipment traffic. Tailings placed inside the facility are also not compacted except as necessary to provide a sufficient platform for the stacking equipment (Figure 2).

The outer surface of the buttress will be reclaimed as operations proceed as shown on Figure 3.

3.0 OPERATIONAL DUST CONTROL MEASURES

Operation of the DSTF is continuous and at times will require simultaneously incorporating dust control measures for the operations and activities outlined in Section 2.0 – General Tailings Operation. The following activities are covered in this section:

- Section 3.1 – Tailings facility dust control during perimeter buttress construction;
- Section 3.2 – Tailings facility dust control during normal non-perimeter buttress construction operations;
- Section 3.3 – Tailings facility dust control at all other times; and
- Section 3.4 – Additional tailings facility dust control and monitoring methods during periods of high winds.

The dust control methodologies outlined herein are designed to ensure that at least a 90% control of PM₁₀ emissions is achieved.

Travel to and from the open pit to the dry stack perimeter buttresses, and along the perimeter buttresses themselves, will be on unpaved haul roads that are subject to the dust control provisions found in the approved *Dust Control Plan* (see Permit, Attachment “D”). There are three (3) dust control programs associated with haul roads. All three (3) programs are also designed to ensure that at least a 90% control of PM₁₀ emissions is achieved. These programs can be incorporated, as needed, into any of the operational dust control measures described herein. These haul road dust control programs include the flexibility to alternate from one dust control program to another or to use a separate haul road dust control program for an individual application.

3.1 TAILINGS FACILITY DUST CONTROL DURING PERIMETER BUTTRESS CONSTRUCTION

Buttress construction will consist of placing waste rock along the outside perimeter of the DSTF. Waste rock material used in the buttress construction will be normal, run-of-mine (ROM) material consisting of a wide range of particle sizes. The haul trucks will end-dump the waste rock (Figure 3) and dozers will be used to grade the material as needed.

Section D.3 of the *Dust Control Plan* covers the control of fugitive dust emissions from open areas and storage piles. As noted in Section D.3.1, ore and waste rock areas are excluded from these requirements due to these material types being characterized as having a low silt content. The D₅₀ of the waste rock is anticipated to be around 12-inches (CNI, 2008). In addition to the large particle sizes, it is anticipated that recently blasted rock will also have a moisture content of about 4% (by weight). However, in the event dust suppression is needed during the end dumping/grading operation, water can be applied via sprays/cannons mounted on water trucks.

The waste rock material forming the perimeter buttress will initially be placed at the material’s angle of repose. The outer shell of the DSTF will be reshaped during operations to have inter-bench slopes of approximately 3H:1V and will incorporate the construction of drainage benches.

Material haulage will be on compacted earthen roads on top of the perimeter buttresses. These roads will be approximately 125 feet wide to accommodate two-way, haul truck traffic. At a minimum, the top of the perimeter buttress will be about 150 feet wide to accommodate both the roadway and safety berms. Haul truck traffic to and from the DSTF will be on the buttresses and not directly on the dry stack tailings. Haul roads will require adequate dust control, i.e., watering or application of chemical dust suppressant, or both.

General (light-duty) vehicle traffic will be limited to 35 mph traveling on the Property (see Attachment “B”, Condition VI.B.1.f. on page 38 of 58 of the Permit). General (light-duty) vehicle speeds shall be limited to 35 MPH on roads with adequate dust control. Additionally, Rosemont intends to limit speeds

to 15 MPH when travelling directly on top of the dry stack tailings on an unsurfaced travel route. Other roads that are not in regular use will also have a 15 MPH limitation in order to control dust.

3.2 TAILINGS FACILITY DUST CONTROL DURING NORMAL NON-PERIMETER BUTTRESS CONSTRUCTION OPERATIONS

The tailings material will be placed in lifts by a stacking system and the top surface graded as needed to provide a suitable surface for the conveyor and stacking system, and to minimize dust generation. (As planned, the surface of the tailings will be below the elevation of the adjacent perimeter waste rock buttress [Figures 1 through 3]. This will provide some protection of the tailings surface against wind erosion, especially at the edges of the tailings surface.)

Section D.3 of the Dust Control Plan describes the control of fugitive dust emissions from open areas and storage piles. The exposed dry stack tailings surface is regulated under these requirements. Dust control on active operational areas on the surface of the dry stack tailings will be undertaken as necessary, and as dictated by climatic conditions. Controls may include the application of water, chemical binders, or other dust suppressants.

Travel speeds will be limited to control dust and traffic will be restricted, as practicable, on areas that are inactive or that have been treated with a dust suppressant/binder. Access to such areas may be minimized by the construction of berms or other barriers.

Periodic inspections of inactive open areas on the tailings surface will be performed to evaluate the condition of the tailings. As needed to control fugitive dust emissions, a chemical dust suppressant/binder and/or water will be applied via sprays/cannons mounted on a water truck. As noted in Section D.3.2 of the Dust Control Plan, practices, which may be applied to control fugitive dust include the use of an adhesive soil stabilizer, landscaping, detouring, or other acceptable means.

3.3 TAILINGS FACILITY DUST CONTROL AT ALL OTHER TIMES

This section includes dust control associated with the following activities/operations:

- Conveyor System
- Reclamation

3.3.1 Conveyor System

Tailings will be generated from the sulfide ore processing (grinding and flotation) circuit in the mill concentrator area. Tailings slurry from the processing circuit is sent to a thickener tank for initial dewatering and then to a filter plant. In the filter plant, the tailings are further dewatered to a moisture content out of the Filter Plant of 18% or less by dry weight (ADEQ, 2015).

Once dewatered, the moist “dry” stack tailings are then placed on a fixed conveyor to a transfer station and then transferred to one of two movable conveyor systems. Each of these movable conveyor systems is redundant; one will generally operate while the other will be idle, under-going system changes or servicing.

As envisioned, at the end of each redundant system, a shiftable conveyor will be equipped with a tripper car that will allow material to be removed from the conveyor anywhere along its length. The tripper car will transfer material to the spreader unit. Due to the moisture content of the tailings coming out the filter plant, the generation of dust along the conveyor and final distribution point is not anticipated. However, water sprays, with or without a dust suppressant/binder, may be added as practicable (and if necessary) along the conveyor.

3.3.2 Reclamation

Reclamation activities include the following operations:

- Resloping/reggrading the outer perimeter buttress
- Resloping/reggrading the outer perimeter buttress and top of the tailings surface, and
- Adding cover materials to the outer surfaces (waste rock and cover soil).

Dust control during resloping of the outer waste rock shell of the DSTF from angle of repose to the final graded contour is covered under Section 3.1 above. Dust control during any as needed reggrading of the top tailings surface to match final reclamation contours would generally be accomplished by the application of water via sprays/cannons mounted on water trucks and by additional densification as needed. Dust control during grading operations on the tailings surface would comply with requirements for open areas and storage piles found in Section D.3 of the Dust Control Plan.

Additionally, waste rock will be placed on the final reggraded tailings surface followed by the placement of growth media. The placement of waste rock on the top surface of the dry stack tailings surface would first be preceded by road plating with enough waste rock material in order to accommodate the large haul trucks. Dozers would be used to push the waste rock end dumped by the haul trucks out from these temporary access roads. These temporary access roads would be spaced for efficient operations. Again, moisture conditioning and dust control during these activities would generally be accomplished, as needed, with water applied via sprays/cannons mounted on water trucks.

3.4 ADDITIONAL TAILINGS FACILITY DUST CONTROL AND MONITORING METHODS DURING PERIODS OF HIGH WINDS

When wind speeds are at or above 15 mph, or gusts at or above 20 mph, as measured at the official Meteorological Station, or other appropriate location, the top surface of the DSTF (tailings) shall be physically inspected, at least once per day, to determine locations where easily erodible areas exist (see Attachment "B", Condition VI.B.2.d.(2) on page 38 of 58 of the Permit). Water and/or dust suppressant/binders may be added to these erodible areas as soon as practicable. The water/dust suppressant/binder would likely be applied to the tailings surface via sprays/cannons mounted on a water truck.

Additional dust control measures during high winds may include, as practicable, the following:

- Adjustment of the tailings filter moisture content to the higher end of the acceptable moisture range;
- Moisture conditioning of the dry stack tailings along the portable conveyor;
- Use of binders on the tailings;
- Restrict traffic and activities on the DSTF to only that essential for tailings placement operations; and
- Reduce equipment travel speeds on the surface of the DSTF.

4.0 OPACITY MONITORING PROCEDURES

4.1 EPA CERTIFIED OBSERVER

Any instantaneous survey required by this Permit shall be determined by a Certified EPA Reference Method 9 Observer (see Attachment "B", Condition II.A.1.a. on page 18 of 58 of the Permit). Additionally, any six-minute observation required by this Permit shall be determined by EPA Reference Method 9 (see Attachment "B", Condition II.A.1.b. on page 18 of 58 of the Permit), also by a Certified EPA Reference Method 9 Observer.

4.2 OBSERVATION METHODOLOGY AND LIMITS

The opacity limitation for a fugitive dust point source, which includes the tailings conveyor system drop points, is 20% (Attachment "B", Condition VI.B.1.b on page 35 of 58 of the Permit). Additionally, the opacity of emissions from any fugitive dust non-point source shall not be greater than 40% (Attachment "B", Condition VI.B.1.a. on page 35 of 58). This opacity limitation includes the DSTF (tailings, waste rock surfaces).

4.3 OPACITY MONITORING SURVEY LOCATIONS AND FREQUENCY

The VOP shows the locations of the fugitive dust lookout points. With regard to the DSTF, the following monitoring frequencies are discussed in the VOP.

- Per Attachment "B", Condition VI.B.2.c.(1) on page 38 of 58 of the Permit, a weekly visual survey of visible emissions (opacity) from the fugitive dust sources excluding mineral tailings (i.e., along the tailings conveyor system) shall be performed in accordance with methodology identified in Condition II.A of Attachment "B" of the Permit (see page 18 of 58 of the Permit).
- Per Attachment "B", Condition VI.B.2.c.(2), on page 38 of 58 of the Permit, a minimum of twice daily visible emissions (opacity) surveys shall be conducted [for] the mineral tailings (DSTF) starting from the day the buttress construction begins. The survey shall be conducted by a certified observer. Readings shall be conducted per Attachment "B", Condition II.A of page 18 of 58 of the Permit.
- Per Attachment "B", Condition VI.B.2.d.(2) on page 38 of 58 of the Permit, the tailings shall be physically inspected for easily erodible areas at least once daily when wind speeds are at or above 15 MPH, or gusts are at or above 20 MPH.

5.0 GENERAL DUST CONTROL METHODS

The following procedures for general dust control methods are listed in Attachment “B”, Conditions VI.B.1.c.(1) through VI.B.1.c.(9) on pages 35 and 36 of 58 in the Permit. Records shall be maintained of the dates on which any of the activities listed were performed and the control measures that were utilized (Attachment “B”, Condition VI.B.2.b on page 38 of 58 of the Permit).

- Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means;
- Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means;
- Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed;
- Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust;
- Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods when crushing, handling, or conveying material likely to give rise to airborne dust;
- Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored;
- Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents;
- Any other method as proposed by the Permittee and approved by the Director; and
- Operate mineral tailings piles by taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Reasonable precautions shall mean wetting, chemical stabilization, revegetation or such other measures as are approved by the Director.

Additional general dust control requirements attributable to the DSTF area, and as listed in Attachment “B”, Conditions VI.B.1.e.(2), (3), and (4) on page 37 of 58 in the Permit, include:

- Water, or an equivalent control, shall be used to control visible emissions from haul roads and storage piles;
- The Permittee shall comply with the dust control measures identified in the *Dust Control Plan* specified in Attachment “D” of the Permit; and
- The Permittee shall use appropriate means, such as berms, signs or other effective procedures, to restrict traffic usage to the treated areas. Should there be a rock spill on a roadway such that traffic is blocked, the Permittee shall clean up the spill; under no circumstances is traffic to be diverted to untreated areas to avoid the spill. This condition does not prohibit cleanup equipment from using untreated areas in the course of cleanup activities.

6.0 MONITORING AND REPORTING

Monitoring and reporting components for this portion of the Air Quality Control Permit No. 67001 are listed below.

6.1 MONITORING

The following monitoring and record keeping are required by the Permit:

- Records of all monitoring information shall include, but is not limited to, the following (Attachment “A”, Condition XIII.A on pages 11 and 12 of 58 of the Permit):
 - The date, place as defined in the Permit, and time of sampling or measurements;
 - The date(s) analyses were performed;
 - The name of the company or entity that performed the analyses;
 - A description of the analytical techniques or methods used;
 - The results of such analyses; and
 - The operating conditions as existing at the time of sampling or measurement.
- Records shall be kept of the total tons of daily rock mined (including ore and waste rock). Records of each day’s mined rock total shall be available in a central log no later than 5:00 pm the following business day (Attachment “B”, Condition II.A.4.e. on page 21 of 58 of the Permit).
- Opacity monitoring as detailed in Section 4.3 and discussed in prior sections.
- Record the lengths of active unpaved service roads and unpaved haul roads such that the total lengths of operational unpaved roads do not exceed those used in the application or that would result in the exceedance of a modeled parameter (Attachment “B”, Condition VI.B.1.d. on page 37 of 58 of the Permit).
- Maintain records on the activities (dates) conducted for the general dust control methods listed on pages 35 and 36 of 38 in Attachment “B”, Conditions VI.B.1.c.(1) through c.(9) (Attachment “B”, Condition VI.B.2.b. on page 38 of 58 of the Permit).
- Records (Attachment “B”, Condition VI.B.2.a. on page 38 of 58 of the Permit) shall be kept to demonstrate compliance with training and posting of speed limits for general (light-duty) vehicle traffic travelling on the Property [see Section 3.1 above and Attachment “B”, Condition VI.B.1.f.(1) on page 38 of 58 of the Permit]. In summary, general (light-duty) vehicle speeds shall be limited to 35 MPH on roads with adequate dust control. Additionally, Rosemont also anticipates limiting general (light-duty) vehicle speeds to 15 MPH when travelling directly on unsurfaced travel routes on top of the dry stack tailings or on other roads that are not in regular use.
- When wind speeds are at or above 15 MPH, or gusts are at or above 20 MPH, a record of the following shall be kept per Attachment “B”, Condition VI.B.2.e.(2) on page 39 of 58 of the Permit:
 - Meteorological data;
 - All tailings inspections; and
 - All control measures used and corrective actions taken to demonstrate compliance with opacity limitations.

- Record watering schedules per shift basis (Attachment “B”, Condition VI.B.2.e.(3) on page 39 of 58 of the Permit and per Section D.7.3 of *Dust Control Plan*).
- Record initial and subsequent application of dust suppressants per Sections D.7.1 and D.7.2 of the *Dust Control Plan*.
- Recording the following information may be required depending on the selected haul road dust control plan (see *Dust Control Plan*):
 - Meteorological conditions (precipitation, evaporation);
 - Traffic volume along select roads sections; and
 - Tonnage of material moved along certain road sections.

6.2 REPORTING

Notwithstanding initial exceedance notifications, reporting to ADEQ will include the following on the specified timelines.

- Compliance Schedule (submit to Director of ADEQ within 21 days of any excess emission or permit deviation that cannot be corrected with 72 hours (Attachment “A”, Condition XII.D. on page 9 of 58 of the Permit). The compliance schedule shall include:
 - Schedule of remedial measures; and
 - Enforceable sequence of actions with milestones, leading to compliance with permit terms or conditions that have been violated.
- Semiannual Compliance Certification (period from October 1st to March 31st; due by May 15th) (Attachment “A”, Condition VII.A. on page 5 of 58 of the Permit)
- Semiannual Compliance Certification (period from April 1st to September 30th; due by November 15th) (Attachment “A”, Condition VII.A. on page 5 of 58 of the Permit)
- The compliance certifications shall include the following (Attachment “A”, Condition VII.B. on page 5 of 58 of the Permit):
 - Identification of each term or condition of the Permit that is the basis of the certification (Condition VII.B.1);
 - Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period (Condition VII.B.2);
 - Status of compliance with the terms and conditions of the Permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the methods or means designated in Condition VII.B.2 of the Permit. The certification shall identify each deviation and take it into account in the compliance certification (Condition VII.B.3);
 - All instances of deviations from permit requirements reported pursuant to Condition XII.B of the Permit (Condition VII.B.4); and
 - Other facts the Director may require [when] determining the compliance status of the source (Condition VII.B.5).

- Semiannual Outstanding Compliance Schedule (April 25th to October 24th; although not specified - provide within about 15 days, i.e., by November 15th) (Attachment “A”, Condition VII.C. on page 6 of 58 of the Permit)
- Semiannual Outstanding Compliance Schedule (October 25th to April 24th; although not specified – provide within about 15 days, i.e., by May 15th) (Attachment “A”, Condition VII.C. on page 6 of 58 of the Permit)
- Per Attachment “B”, Condition II.A.4.i. on page 21 of 58 of the Permit, a summary report of all monitoring activities shall be submitted along with the semiannual Compliance Certification reports. The monitoring report shall shall:
 - Identify each monitoring activity;
 - State whether monitoring was conducted as required by the Permit;
 - List any deviations with dates, nature of the deviation and any explanation and/or corrective action; and
 - Identify any exceedances to excursions of relevant standards.
- Dry Tailings Management Plan (Attachment “B”, Condition VI.B.1.e.(5)(a) on page 37 of 58 of the Permit). This Plan is to be:
 - Updated within 45 days of permit renewals (see Section 1.0 of this Plan).
- Review of the *Dry Tailings Management Plan’s* effectiveness (Attachment “B”, Condition VI.B.2.d.(3) on page 39 of 58 of the Permit). Review of the Plan is due:
 - January 31st of each year (covering January 1st to December 31st of previous year)
- If review of the *Dry Tailings Management Plan* demonstrates ineffectiveness in controlling emissions, a revised *Dry Tailings Management Plan* is required (Attachment “B”, Condition VI.B.2.d.(3) on page 39 of 58 of the Permit). Revisions to the Plan are due:
 - April 1st (if Plan shows ineffectiveness in controlling emissions)

If necessary, the revised *Dry Tailings Management Plan* shall show improved methods/techniques for reducing emissions in order to minimize or prevent further violations (Attachment “B”, Condition VI.B.2.d.(3) on page 39 of 58 of the Permit). The annual review shall take into account the following:

- Past compliance issues (both resolved and unresolved);
- Validated complaints reported to the Department (ADEQ); and
- Proposed methods of avoiding the above issues/validated complaints in the future.

Additional reporting includes:

- Annual Emissions Inventory Questionnaire (due by March 31st or 90 days after Director “of ADEQ” makes the inventory form available each year) (Attachment “A”, Condition VI.A. on page 5 of 58 of the Permit)

Reporting under the Permit and under this Plan also covers 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 Rosemont Copper Project (Project). These Mitigation Measures are listed below:

- OA-AQ-02 – Dust control for unpaved roads (page B-77 of the FEIS)
- OA-AQ-03 – Dust control for open areas and storage piles (page B-78 of the FEIS)
- OA-AQ-11 – Opacity Monitoring (pages B-82 and B-83 of the FEIS)

Semi-annual reports (and other reporting prepared for ADEQ regarding compliance related to these Mitigation Measures) will be shared with the Forest Service as needed.

As noted above and in Section 1.0, this Plan will require updating within 45 days of the issuance of permit renewals. The *Visual Observation Plan* (Attachment “B”, Condition II.A.2. on page 18 of 58 of the Permit) would also be updated (as needed) at this same time based on permit renewals.

7.0 ADAPTIVE MANAGEMENT

The adaptive management process will be incorporated into the implementation of operational dust control measures. This process will ensure that the most practicable dust control measures are utilized and that the intent of the Plan 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 and 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 reducing emissions

As stated in Section 6.2 above, this *Dry Tailings Management Plan* shall be reviewed annually for effectiveness in controlling fugitive emissions (Attachment "B", Condition VI.B.2.d.(3) on page 39 of 58 of the Permit). This review is due to the Director of ADEQ air permit division by January 31st, which covers the reporting period from January 1st through December 31st of the previous year.

If the review of the Plan shows ineffectiveness in controlling emissions, a revised Plan shall be submitted for approval by April 1st following the annual review. The revised Plan shall show improved methods/techniques for reducing emissions in order to minimize or prevent further violations. The annual review shall take into account the following:

- Past compliance issues (both resolved and unresolved);
- Validated complaints reported to the Department (ADEQ); and
- Proposed methods of avoiding the above issues/validated complaints in the future.

With regard to the *Dust Control Plan*, Attachment "B", Condition II.A.2.e. on page 19 of 58 of the Permit, states the following:

The Permittee shall comply with the dust control plan included in Attachment "D" of this permit to control particulate matter emissions from activities identified in the dust control plan. The permittee may implement proposed changes to the dust control plan upon submission to the Director if necessary to further minimize fugitive dust. Nothing in this permit prohibits the Permittee from implementing additional dust control measures not set forth in the dust control plan

8.0 DATA MANAGEMENT

Records will either be kept in hardcopy format or electronically. These records will be used as a basis of reporting and compliance verification.

Regarding document retention (Attachment "A", Condition XIII.B. on page 12 of 58 of the Permit):

The Permittee shall retain records of all required monitoring data and support information for a period of at least five (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.

Additionally, regarding document retention (Attachment "B", Condition II.A.4.g. on page 21 of 58 of the Permit):

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.

9.0 REFERENCES

Arizona Administrative Codes (A.C.C.)

ADEQ, 2013. Air Quality Class II Synthetic Minor Permit #55223 for the Rosemont Copper Project (includes *Dust Control Plan*). January 31, 2013.

2015. Aquifer Protection Permit No. P-106100, amended August 26, 2015.

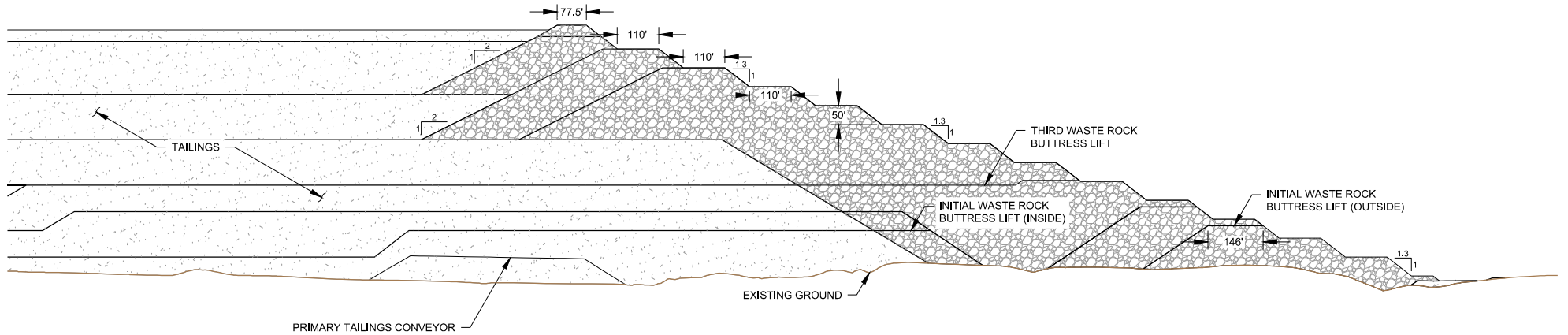
2018a. Air Quality Class II Synthetic Minor Permit #67001 for the Rosemont Copper Project (includes *Dust Control Plan*). April 24, 2018.

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

CNI, 2008. *Feasibility-Level Geotechnical Study for the Rosemont Deposit*. Prepared for Augusta Resources. Report dated February 2008.

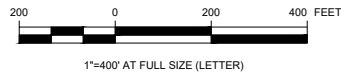
USFS, 2013. *Final Environmental Impact Statement for Rosemont Copper Project, Appendix B Mitigation and Monitoring Plan*. December 2013

FIGURES

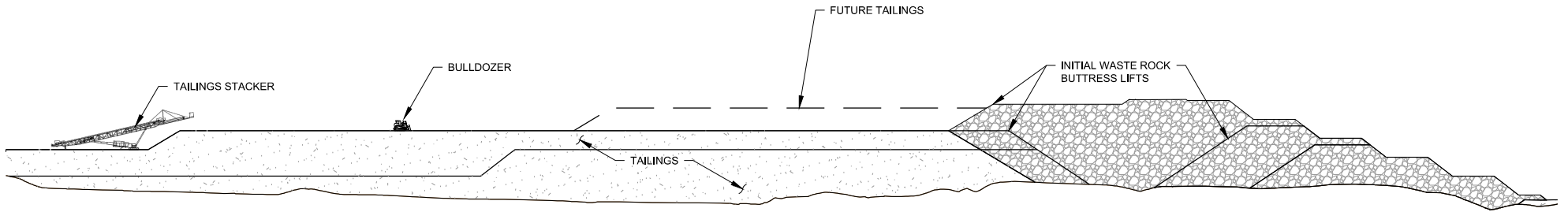




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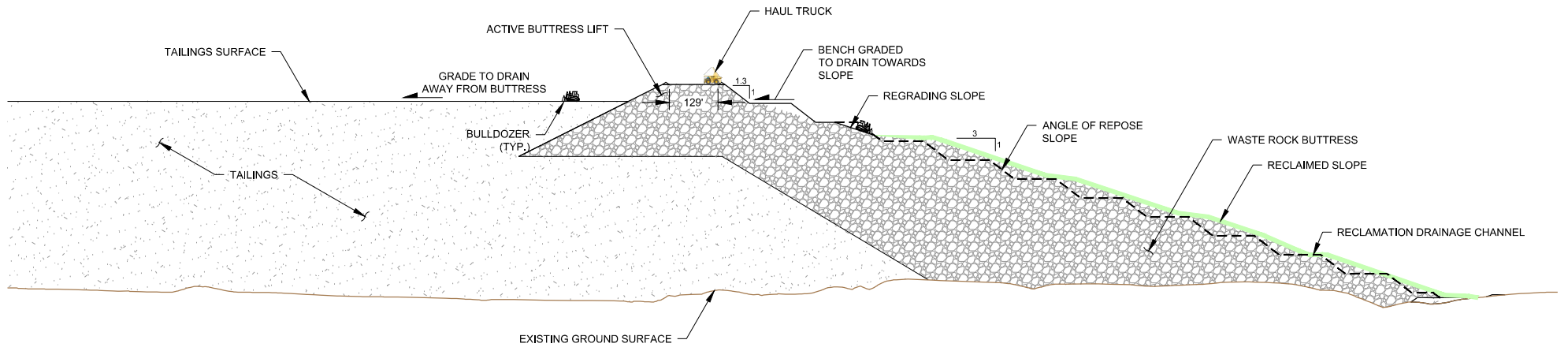
- 1. SCALE BAR MEASURES 1.5" ON A FULL SIZE PLOT (ANSI-A).



PROJECT						ROSEMONT COPPER PROJECT					
TITLE						TAILINGS WASTE ROCK PERIMETER BUTTRESS TYPICAL SECTION					
CLIENT											
DESIGNED BY	JT	LOCATION	PROJECT NUMBER	FIGURE NUMBER	REVISION						
DRAWN BY	RS	DV101	349.11	1	A						
ACTIVITY CODE	N/A	XREF NUMBER	N/A								



PROJECT						ROSEMONT COPPER PROJECT					
TITLE						TAILINGS STACKER AND EQUIPMENT TRACKING ON TAILINGS (NOT TO SCALE)					
CLIENT						 					
DESIGNED BY	JT	LOCATION	PROJECT NUMBER	FIGURE NUMBER	REVISION						
DRAWN BY	RS	DV101	00349.11	2	A						
ACTIVITY CODE	N/A	XREF NUMBER	N/A								



PROJECT						ROSEMONT COPPER PROJECT					
TITLE						CONCURRENT RECLAMATION OF OUTER BUTTRESS SLOPE					
CLIENT											
DESIGNED BY	JT	LOCATION	PROJECT NUMBER	FIGURE NUMBER	REVISION						
DRAWN BY	RS	DV101	349.11	3	A						
ACTIVITY CODE	N/A	XREF NUMBER	N/A								