

TECHNICAL SUPPORT DOCUMENT (TSD)

I. GENERAL COMMENTS:

A. Company Information

Business Name: ASARCO, LLC - Mission Complex

Facility Address: 4201 W. Pima Mine Road
Sahuarita, Arizona 85629

Mailing Address: (Same as Facility Address)

B. Background

The ASARCO, LLC - Mission Complex (ASARCO) was first permitted in August 1969. The initial permit (containing a one-year permit term) was renewed annually until the facility received their first 5-year permit effective June 16, 2003. The second 5-year permit was issued April 19, 2013.

A portion of the ASARCO is located on land owned by the Tohono O'odham Nation: and is referred to as ASARCO Mission Mine Complex - San Xavier. The San Xavier facility operates under its own Title V Permit # TO-ROP 15-01, issued by US EPA, on August 10, 2017 ¹.

This TSD supports the permit written as a result of the renewal application received October 16, 2017, a facility change allowed without a permit revision (Upgrade of three vibratory feeders at the Mission Primary Crusher stockpile.) received, November 22, 2017, a facility change application received, April 3, 2018, for the addition of a 37-kW non-emergency stationary generator in the mine pit and a facility change application, received August 14, 2018, for the addition of a non-emergency 75-kW generator to support operations at the waste water treatment plant. The TSD will be updated with permit actions taken during the current permit term as they are approved. The updates will consist of listing approved permit actions in the "Summary of Permit Actions Within the Current Permit Term" table below.

¹ <https://www.regulations.gov/document?D=EPA-R09-OAR-2017-0252-0008>

The Table below summarizes the permit actions taken since the last permit renewal, December 21, 2018.

Summary of Permit Actions Within the Current Permit Term

| Date Received/ Approved | Permit Action |
|--|--|
| Received 05/15/2019 Approved 08/29/2019 | 2026-111P Minor Permit Revision: Replacement of the existing motor on the South Primary Crusher Radial Stacker (10-105). The new motor will increase the rated capacity of the Radial Stacker to 4,500 tons per hour (tph). The existing rating capacity of the Radial Stacker motor is 3,300 tph. There will not be an annual increase in ore throughput as a result of this modification. |
| Received 05/17/2019 Approved 05/17/2019 | 2026-112P Facility Change Without Revision: Upgrades to conveyor belts M309-E2 and M309-E6. |
| Received 06/14/2019 Approved 06/21/2019 | 2026-110P Facility Change Without Revision: Removal of E47/E48 structures to allow full use of the Ball Mill 14 storage bin. |
| Received 07/17/2019 Approved 07/19/2019 | 2026-113P Facility Change Without Revision: Replacement of the 75 kW non-emergency stationary generator located at the Waste Water Treatment Plant (Equipment ID WWTP-GEN), subject to the Provisions in 40 CFR Part 63 Subpart ZZZZ, with a 100 kW non-emergency Tier 4 Certified Stationary Generator (Equipment ID WWTP-GEN) subject to the provisions in 40 CFR Part 60 Subpart III. |
| Received 01/02/2020 Approved 01/02/2020 | 2026-114P Administrative Permit Amendment: Change of Responsible Official. |
| Received 03/19/2020 Approved 05/29/2020 | 2026-115P Minor Permit Revision: Replacement of the South Mill 365 kW emergency stationary generator (Equipment ID SMEME-GEN), subject to the Provisions in 40 CFR Part 63 Subpart ZZZZ, with two 275 kW non-emergency Tier 4 Certified Stationary Generators (Equipment IDs SM-GEN1 and SM-GEN2) subject to the provisions in 40 CFR Part 60 Subpart III and a voluntary rolling 12-month hourly limitation of 1,000 hrs. Change in PTE (TPY): NOX = -7.33, CO = 0.49, PM10 = -0.52, SO2 = 0.26, VOC = -0.49 |
| Received 01/26/2021 Approved 04/02/2021 | 2026-116P Minor Permit Revision: Installation of a Tier 4 certified, 500 kW, non-emergency, diesel generator (Tailings Generator #1TEG-GEN1) subject to the provisions in 40 CFR Part 60 Subpart III, near the Tailings Storage Facility (TSF) #4 to support operating the electric powered pumps at TSF #4 for decanting purposes. Change in PTE (TPY): NOX = 1.93, CO = 16.9, PM10 = 0.10, PM2.5 = 0.10, SO2 = 0.03, VOC = 0.92 |

C. Attainment Classification

This facility is located in a region that is designated as attainment for all criteria pollutants.

II. FACILITY DESCRIPTION

(The following information was provided by ASARCO in their permit renewal application dated October, 2017.)

A. Facility Overview

The Mission Complex is an open pit copper mine that extracts copper ores for the production of copper concentrate. The copper concentrate is shipped off site for processing into metallic copper for use in commerce. The mine operates equipment and processes for drilling and blasting of the ore body, collection, and transfer of the blasted ore to crushing equipment, ore grinding, crushed ore screening, and beneficiation of the crushed ore to concentrate using the conventional froth flotation method. The final product is a copper concentrate that is shipped off-site for further beneficiation of the copper concentrate to metallic copper. The facility currently operates 24 hours per day, 365 days per year except during preventative maintenance, shutdown, or repair of equipment.

B. Process Descriptions

The Mission Mine Complex operates three crushing and three grinding circuits as follows:

- 1) Mining Activities - ASARCO operates an open pit mine for the extraction of copper ore. Equipment and processes used to extract copper include drilling, blasting, shovels, haul truck, and other miscellaneous equipment. The mined ore is transferred to the Mission North Circuit and Mission South Circuit for further processing.
- 2) Mission North Circuit - The circuit consists of the Mission Primary/Secondary Crushers, Mission North Primary/Secondary/Tertiary Crushers, Coarse Ore Stockpile, and the Mission Concentrator.
- 3) South Circuit-The circuit consists of the Mission South Primary Crusher, Coarse Ore Stockpile and Concentrator.
- 4) By-Product Plant- The by-product circuit includes material handling screw dryers. The circuit conducts no crushing and grinding operations. (Please note that operations at the Moly By-product Circuit have been temporarily suspended by ASARCO.)
- 5) Emergency Generators - The facility has installed and operates generators to support specific operations at the mine when power from the main line is not available.
- 6) Fuel Storage and Dispensing-The Mission Complex operates several tanks and associated equipment for the dispensing of gasoline and diesel fuel for onsite equipment.
- 7) Mine Tailings -Tailings slurry from the extraction and beneficiation process is piped to the tailing facility.

C. Air Pollution Control

Where possible, fugitive particulate emissions (PM) are controlled during mining activities with dust shields and wetting down surfaces. Wet scrubbers, dry dust collectors, precipitators, enclosures and water spray bars are used to control PM emissions from the crushing and screening facility operations. Submerge fill pipes are installed in all gasoline storage tanks. PM emissions from the tailings dams are controlled using smearing, water application (as needed), and application of a dust suppressant (acrylic co-polymer, magnesium chloride), while long term controls are achieved through natural vegetation with the use of biosolids as a soil amendment.

III. COMPLIANCE HISTORY

The last Full Compliance Evaluation (FCE) was conducted in March 2018 with no deficiencies noted with respect to permit conditions. Since the last FCE was conducted one minor permit revision was requested for the installation of a nonemergency generator in the mine pit (PDEQ Permit Action 2026-108P).

Since the last FCE, PDEQ has not received any permit deviations and/or excess emissions reports from ASARCO.

PDEQ has not received any complaints for the facility since the last FCE. No Notice of Violation or Opportunity to Correct actions have been issued by PDEQ to the facility since the previous FCE was conducted.

IV. EMISSION ESTIMATES

A. Facility Wide Estimates

The Arizona Revised Statutes (§49-480.L) require that the Control Officer exclude particulate matter not subject to a national ambient air quality standard when considering permitting thresholds for existing sources. The primary pollutants of concern are PM₁₀ and PM_{2.5}. Sources of these pollutants are found in almost all the overburden and ore handling processes. The majority of emissions are fugitive.

On November 19, 2001, EPA revised the definition of "major source" in 40 CFR Part 70 to exclude the counting of fugitive emissions of criteria pollutants unless the source was regulated by a federal standard promulgated on or before August 7, 1980. The ASARCO complex is regulated by an NSPS federal standard for Metallic Mineral Processing Plants. Since that standard was promulgated on February 21, 1984, and since ASARCO is not a categorical source, the Control Officer has not counted any fugitive emissions of criteria pollutants in the potential-to-emit estimates.

The following Non-Fugitive emission estimates were submitted by ASARCO, LLC as part of their renewal application and two subsequent facility changes that were approved before the renewal permit was issued.

Table I – Potential to Emit Summary

| Pollutant | Facility Wide Potential To Emit (Non-Fugitive) (Tons per Year) |
|--|---|
| Particulate Matter (as PM ₁₀) | 167 |
| Particulate Matter (as PM _{2.5}) | 158 |
| Nitrogen Oxides (NO _x) | 26 |
| Sulfur Oxides (SO _x) | 2.4 |
| Carbon Monoxide (CO) | 15 |
| Volatile Organic Compounds (VOC) | 7.4 |
| Hazardous Air Pollutants (HAP) | 5.48 |

ASARCO, LLC, is a **Class I; Major Source** for PM₁₀ and PM_{2.5} and a minor source for all other regulated pollutants.

V. APPLICABLE REQUIREMENTS

A. Code of Federal Regulations Title 40:

- 60 Subpart LL Standards of Performance for Metallic Mineral Processing plants.
- 60 Subpart IIII New Source Performance Standards (NSPS) for Stationary Rotating Internal Combustion Engines
- 60 Subpart JJJJ New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines
- 63 Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 63 Subpart CCCCCC National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities
- 64 Compliance Assurance Monitoring (CAM)

B. Pima County Code State Implementation Plan (SIP):

- Rule 224 Fugitive Dust producing Activities
- Rule 314 Petroleum Liquids
- Rule 315 Roads and Streets
- Rule 316 Particulates Materials
- Rule 321 Opacity Standards and Applicability
- Rule 332 Compilation of Mass Rates and Concentrations
- Rule 343 Visibility Limiting Standard

C. Pima County Code (PCC) Title 17, Chapter 17.16:

- 17.16.020 Noncompliance with Applicable Standards
- 17.16.040 Visible Emission Standards: Standards and applicability (Include NESHAP)
- 17.16.050 Visibility Limiting Standards
- 17.16.060 Fugitive Dust Producing Activities
- 17.16.090 Roads and Streets
- 17.16.100 Particulate Materials
- 17.16.110 Storage Piles
- 17.16.120 Mineral Tailings
- 17.16.130 NSPS Applicability
- 17.16.140 Compilation of mass rates and concentrations
- 17.16.160 Standards of Performance for Fossil-Fuel Fired Steam Generators and General Fuel Burning Equipment
- 17.16.230 Standards of Performance for Storage Vessels for Petroleum Liquids
- 17.16.340 Standards of Performance for Stationary Rotating Machinery
- 17.16.360 Standards of Performance for Nonferrous Metals Industry Sources

VI. PERMIT CONTENTS

A. Applicability:

ASARCO is subject to a Federal New Source Performance Standard (NSPS) namely Title 40, Code of Federal Regulations (CFR), Part 60, Subpart LL (Standards of Performance for Metallic Mineral Processing plants). The standards of performance are promulgated for the control of particulate matter and apply to new, modified and reconstructed facilities.

The provisions of this NSPS Subpart LL apply to the following affected facilities at the Mission Complex: Each crusher and screen in open-pit mines; each crusher, screen, bucket elevator, conveyor belt transfer point, thermal dryer, product packaging station, storage bin, enclosed storage area, truck loading station, truck unloading station, railcar loading station, and railcar unloading station at the mill or concentrator.

The NSPS Subpart LL identifies a stack emission limitation for particulate matter (PM). It also provides emission limits for fugitive dust emissions by adopting an opacity or visibility of fugitive dust emissions and compares it with established limits. Finally, the rule requires periodic monitoring of wet scrubbers which are PM emissions control devices.

EPA exempts wet material processing operations from the requirements of this standard. These processes as defined, have no potential for PM emissions.

B. Emission Limitations and Standards:

The specific emission limits and standards applicable to the Mission Complex have been grouped by operation type and called Sections. Each section represents a particular process or operation at the facility. The Control Officer has (where possible) organized the specific conditions identified in each Section parallel to where the process/operation starts and ends. Within sections 1 through 3, 6 and 11 equipment has been organized into three subgroups A, B, and C. Section 7 has been organized into four subgroups A, B, C and D.

Paragraph I of sections 1 through 3 and 6, 7, 9, 11 and 12 in the permit contain conditions for emission limitations and standards.

Sections 5, 8A and 8B contain permit conditions for the stationary engines (emergency and non-emergency generators) at the facility. Paragraph II of these sections contain permit conditions for emission limits and standards for the generator engines.

C. Monitoring Requirements:

Paragraph II of sections 1 through 3 and 6, 7, 9, 11 and 12 contain monitoring requirements.

Sections 5, 8A and 8B contain permit conditions for the stationary engines (emergency and non-emergency generators) at the facility. Paragraph III of each of these sections contain permit conditions for monitoring requirements.

Section 10 of the permit identifies the Compliance Assurance Monitoring Plan (CAM) rule, which requires the monitoring, compliance certification, periodic reporting, and recordkeeping requirements for the controlled pollutant specific emissions units (PSEU's) that have a pre-control potential to emit major amounts of regulated air pollutants.

D. Facility Changes:

The Permittee retains the ability to modify operations at the facility. However, the permit covering the facility must reflect the current state of operations *at all times*. Therefore, provisions have been made in the Pima County Code to allow changes in air quality permits to reflect new facility conditions. The proper procedure must be followed when making certain modifications to the facility, and the permit. See the rules referenced in the permit for enumeration of these requirements.

E. Alternate Operating Scenarios:

As part of the normal operations, ASARCO facility does not have an alternate operating scenario that would trigger a different set of applicable requirements.

The facility occasionally produces a by-product molybdenum concentrate that originates from diverting the copper concentrate from the Mission Mill to the By-Products plant. The by-products plant process involves additional flotation to produce the molybdenum concentrate. By-product production may be temporarily suspended at the By-Products plant during times of depressed molybdenum prices and resume when prices recover and profitability improves. The specific requirements applicable to the by-products plant are identified in Section 11 of the permit.

VII. IMPACTS TO AMBIENT AIR QUALITY

None required as the source is not subject to PSD or NSR.

VIII. CONTROL TECHNOLOGY DETERMINATION

No control technologies needed to be determined. This facility is in an area of attainment and is not a new source.

IX. PREVIOUS PERMIT CONDITIONS

The following section of the TSD refers to the specific conditions of the permit that have been revised, removed or added to the previous permit and the specific conditions of the existing permit that have been revised, removed or added as a result of the facility changes and minor revision listed in the "Summary of Permit Actions Within the Current Permit" table in section B of the TSD.

Part A: General Provisions

There were no content changes to Part A of the existing Permit. Since issuance of the previous permit PDEQ reorganized Pima County Code (PCC) Title 17. The existing PCC references were changed, where applicable, to conform to the current updated PCC Title 17 reorganization.

Part B: Specific Conditions

There were multiple changes to Part B of the permit. These changes are outlined below.

Section 1 – Mission Primary crusher and Stockpile

In October 2012, ASARCO submitted a significant permit revision application for refurbishment of the Mission Primary Crusher. Had the refurbishment been implemented all equipment in this emission group that was not already subject to NSPS requirements would have become subject to the requirements of NSPS at 40 CFR 60 Subpart LL. ASARCO has not implemented this refurbishment project and ASARCO does not intend to implement this refurbishment in the future. In their permit renewal application, ASARCO requested PDEQ to remove the permit conditions and limits that were included in the previous permit due to the October 2012 significant permit revision since they no longer apply to the existing equipment in this emission group. In response to this request, PDEQ removed the permit conditions and ore throughput limitation at the primary crusher that were included in the permit because of the refurbishment.

Section 2 – Mission Secondary Crusher

Section 2 of the previous permit has been removed since all of the wet scrubbers have now been replaced with dry dust collectors.

Section 2A – Mission Secondary Crusher

Section 2A has been renamed Section 2 because the wet scrubbers have all been replaced by the dry dust collectors and Section 2 of the previous permit has been removed.

Section 3 – Mission Concentrator

Several existing emission points were added to Emission Group C, Rail Car Loading (HFOPM-3), Haul Truck Transfer Points (HFOPM-4), and the Cleanup Conveyor Transfer Point (HFOPN-3). These emission points were listed in the PTE of the permit renewal application.

Permit Condition II.B.3 was added requiring biweekly monitoring of the building housing dry dust collectors SSOPM-9 through SSOPM-13.

Section 4 – Mission North Primary Crusher and Stockpile

In the permit renewal application, ASARCO requested PDEQ to delete Section 4. ASARCO has not operated the North Crushing circuit and does not anticipate operating the associated crushing equipment in the future. The permit conditions have been removed and Section 4 only remains as a place holder “reserved” for future use containing no content.

Section 5 – North Combustion Off Gases

The previous permit inadvertently listed these generator engines as emergency engines with an operating limit of 1,000 hours. The renewal permit has corrected this inconsistency. They are now listed as non-emergency stationary engines

An additional non-emergency stationary generator was added to the emission group of this section as a result of a permit revision request submitted by ASARCO, dated April 3, 2018. The additional generator does not have an operating limit.

As the result of a facility change without revision, received July 17, 2019, an NSPS applicable generator was added to emission group B of this section. The new generator is a replacement generator for the Waste Water Treatment Plant.

Section 6A – Mission South Primary Crusher and Stockpile

This section has been removed from the previous permit. The installation of the new control equipment and operation of the new grinding equipment is complete. The post expansion operations and equipment are covered in Section 6B of the previous permit.

Section 6B – Mission South Primary Crusher and Stockpile (Post Expansion)

This section has been renamed Section 6. Condition I.A.3 of the previous permit was removed. The removal of the North Primary Crushing Circuit from the mine operation means the North Primary Crusher will not be operating and the limitation in Condition I.A.3 is no longer applicable. Condition II.A was revised by removing the log requirement for tracking when the Mission primary crushers or Mission secondary crushers are offline.

The emission limit in Condition I.B.1.a of the previous permit was corrected to 0.01 gr/dscf. ASARCO proposed this emission limit as part of the PTE for the South Mill Expansion Revision, dated August 3, 2011. The emission limit in Condition I.B.2 of the previous permit was corrected from 0.05 grams per dry standard cubic meter to 0.003 grains per dry standard cubic foot (gr/dscf). ASARCO proposed an emission limit of 0.003 gr/dscf as part of the PTE for the South Mill Expansion Revision dated August 3, 2011.

The Ore Dump was separated from the Apron Feeder and inserted into Equipment Group C and assigned emission point HFOPS-1. The South Mill Ore Dump was not modified as part of the South Mill Expansion and is considered an existing facility and subject to a 20% opacity for fugitive emissions.

Section 6– Mission South Primary Crusher and Stockpile (Minor Revision 05/15/2019)

As a result of the minor permit revision, dated May 15, 2019, conveyor transfer point PFOPS-3 and its emissions control device, Wet Scrubber SSOPS-2, has become an affected facility and subject to the provisions of 40 CFR 60 Subpart LL.

PFOPS-3 was moved from Equipment Group C (Non-NSPS) to Equipment Group A (NSPS) in the Summary Table at the beginning of Section 6. PFOPS-3 was also added to Subsection II.A (Monitoring requirements for Emission Group A) and removed from Subsection II.C (Monitoring requirements for Emission Group C) in Section 6 of the existing permit.

Additional provision citations from 40 CFR Part 60 Subpart LL were added to permit conditions I.B.1.a and b of Section 6. The permit conditions themselves did not change.

Additional permit conditions in Subsection II.B.2 were inserted to require continuous measurement of the change in pressure of the gas stream and continuous measurement of the scrubbing liquid flow rate through wet scrubber SSOPS-2 as required by 40 CFR Part 60 Subpart LL provisions. These conditions are already required for SSOPS-2 in CAM Plan 6, Section 10, Part B of this Permit.

Additional permit conditions III.C, IV. B, IV.C and V.C.4 were added to the existing permit. These are recordkeeping, reporting and testing requirements, respectively, in the provisions of NSPS Subpart LL that apply to an affected facility (PFOPS-3) using a wet scrubbing emission control device (SSOPS-2).

Permit Conditions V.D in Section 6 were removed from the existing permit because there are no longer any Non-NSPS Pollution Control Devices at the Mission South Primary Crusher area covered by this section of the permit.

Section 7A – Mission South Concentrator

This section has been removed from the previous permit. The installation of the new control equipment and operation of the new grinding equipment is complete. The post expansion operations and equipment are covered in Section 7B of the previous permit.

Section 7B – Mission South Concentrator

This section has been renamed Section 7. Emission Group D, containing the concentrate enclosed storage area, was added to the table listing the emission points comprising the Mission South Concentrator. Permit conditions I.D and II.D were added to include Emission Standards and Monitoring requirements for the concentrate enclosed storage area.

The emission rate units for SSOPS-3 in the previous permit were corrected to grains/dry standard cubic foot in the renewal permit condition I.B.2.a. The emission rate units for SSOPS-4 and SSOPS-4A were corrected to grains/dry standard cubic foot in the renewal permit condition I.B.3.a.

Condition I.A.3 of the previous permit was removed. The removal of the North Mill Primary Crushing Circuit from the mine operation means the North Primary Crusher will not be operating and the limitation in Condition I.A.3 is no longer applicable. Condition III.C was revised by removing the log requirement for tracking when the Mission primary crushers or Mission secondary crushers are offline.

Section 8A – Mission South Combustion Off Gasses

An additional non-emergency stationary generator was added to the emission group of this section as a result of a permit revision request submitted by ASARCO, dated August 14, 2018. The additional generator does not have an operating limit.

The non-emergency Waste Water Treatment Plant generator was replaced with an NSPS applicable generator. This existing generator was removed from this section of the permit. The replacement generated is listed in Section 5. Subsection IX was renumbered to VIII.

The South Mill emergency stationary generator (Equipment ID SMEME-GEN), subject to the Provisions in 40 CFR Part 63 Subpart ZZZZ, was replaced with two non-emergency Tier 4 Certified Stationary Generators (Equipment IDs SM-GEN1 and SM-GEN2) subject to the provisions in 40 CFR Part 60 Subpart IIII and a voluntary rolling 12 month hourly limitation of 1,000 hours. The permit was revised as a result of a minor permit revision application submitted by ASARCO on March 19, 2020.

Section 8B – Mission South Mill Tank Hill Combustion Gases

The fuel listed for the generator in the previous permit was corrected to propane. In Subsection IV.D the reference II.E.1.a.ii was corrected to II.E.2.a.

Section 9 – Mine Activities

The requirement in the previous permit condition I.A.1 of Section 9 to submit a Tailings Management Plan (TMP) within 90 days of issuance of the permit was removed. The existing TMP is reviewed annually by ASARCO and if revisions are necessary ASARCO is required to submit a revised Plan for approval by the Control Officer in permit condition II.A.2 of this Section. For the same reason permit condition I.A.1.f was also removed.

Section 10 – Compliance Assurance Monitoring Plan

Three additional pollutant specific emission units (PSEU) were identified as meeting the requirements for a CAM plan. CAM Plan 5 was renamed CAM Plan 6 and CAM Plan 6 in the previous permit was renamed CAM Plan 7 in the renewal permit. The permit conditions in CAM Plan 5 in the renewed permit are for emission units Wet Scrubbers SSOPM-14, SSOPM-15 and SSOPM-16.

The specific indicator ranges for scrubber flow rate and pressure differential for each wet scrubber listed in the CAM plans of the previous permit were removed. In most cases the wet scrubbers have had subsequent performance tests and the ranges in the previous permit do not represent the most recent performance test results. The permit condition was changed in the permit to $\pm 30\%$ of the average (scrubber flow rate and pressure differential) obtained during the most recent performance test.

ASARCO requested that the differential pressure indicator range for Farr dry dust collectors be revised in the renewal permit to 0-6" H₂O from 0.5 to 6" H₂O in the previous permit. After reviewing performance test results and manufacturer data PDEQ concurred and made the change.

CAM Plan 1- North Circuit Operations

In the permit renewal application, ASARCO requested PDEQ to delete Section 4 in the previous permit. ASARCO has not operated the North Crushing circuit and does not anticipate operating the associated crushing equipment in the future. Pollutant Specific Emission Units at the North Primary Crushing circuit (SSOPN-1, SSOPN-2 and SSOPN-3) were in CAM Plan 1. As a result, CAM Plan 1 was removed.

CAM Plan 2 – Mission Circuit Fine Ore Bin (Mission Concentrator)

No Changes.

CAM Plan 3 – Mission Circuit Operations Primary Crusher System

In their permit renewal application, ASARCO requested PDEQ to remove the permit conditions and limits that were included in the previous permit due to the October 2012 significant permit revision for refurbishment of the Mission Primary Crusher since they no longer apply to the existing equipment in this emission group. ASARCO has not implemented this refurbishment project and ASARCO does not intend to implement this refurbishment in the future. The addition of a second scrubber was part of the refurbishment. In condition V.A.2.iii of the previous permit, two wet scrubbers were listed. The renewal permit lists one wet scrubber.

CAM Plan 4 – Mission Circuit Operations Secondary and Tertiary Crusher System

In condition VI.A.2.iii of the previous permit, Farr Cartridge Units are listed as the type of dry dust collectors used to control particulate matter emissions. ASARCO installed Donaldson Torit Units instead of the Farr units. The renewal permit, condition VI.A.2.ii, lists the Donaldson Torit Units.

CAM Plan 5 in the renewal permit - Mission Concentrator

CAM Plan 5 in the renewal permit is for emission units SSOPM-14, SSOPM-15 and SSOPM-16.

CAM Plan 5 in the previous permit – South Circuit Operations Primary Crusher System

CAM Plan 5 in the previous permit has been renamed CAM Plan 6 in the renewal permit.

The emission limit in Condition VII.A.2.ii of the previous permit was corrected to 0.01 gr/dscf for Wet Scrubber SSOPS-2 in Condition VII.A.2.b.i of the renewal permit. The emission limit for dry dust collector SSOPS-1 was corrected to 0.003 gr/dscf in Condition VII.A.2.b.ii of the renewal permit. ASARCO proposed these emission limits as part of the PTE for the South Mill Expansion Revision, dated August 3, 2011. When the south mill expansion was implemented these units became subject to the proposed emission limits.

CAM Plan 6 in the existing permit – South Circuit Operations Primary Crusher System

As a result of the minor permit revision, dated May 12, 2019, Wet Scrubber SSOPS-2 has become an affected facility and is subject to 40 CFR 60 Subpart LL. Permit condition VIII.A.1 now lists SSOPS-2 as subject to NSPS.

CAM Plan 6 in the previous permit– South Circuit Operations Primary Crusher System, South Mill Concentrator

CAM Plan 6 in the previous permit has been renamed CAM Plan 7 in the renewal permit.

The emission limit in Condition VIII.A.2.ii of the previous permit was corrected to 0.003 gr/dscf for Wet Scrubber SSOPS-3 in Condition VIII.A.2.b.i of the renewal permit. The emission limit was corrected to 0.003 gr/dscf for dry dust collector SSOPS-4/4A in Condition VIII.A.2.b.ii of the renewal permit. ASARCO proposed these emission limits as part of the PTE for the South Mill Expansion Revision, dated August 3, 2011. When the south mill expansion was implemented these units became subject to the proposed emission limits.

Section 11 – By-Product (Molybdenum) Plant

The following Emission Points/Group were added to the facilities table in the renewal permit.

Emission Group A – Filter Press Drop to Dryers and Dryer Drop to Product Packaging

Emission Group C – Product Packaging System (NSPS)

The permit conditions were changed from the previous permit to incorporate provisions of 40 CFR 60 Subpart LL. Wet Scrubber (SSMP-1) is subject to the provisions of 40 CFR 60 Subpart LL. Wet Scrubber SSMP-1 controls emissions from the Product Packaging System (PFMP-1) which is an affected facility and subject to the provisions of 40 CFR 60 Subpart LL. Permit Condition I.C was added.

Section 12 – Gasoline Dispensing Facilities

No Changes

Section 13 – General Facility-Wide Reporting Requirements

No Changes

Attachment 1- Applicable Regulations

Added Part 63 Subpart CCCCC NESHAP for Gasoline Dispensing Facilities and Part 64 Continuous Assurance Monitoring.

Attachment 2 – Equipment List

All equipment tables were updated with current information. Table 3 containing the North Crusher equipment and Table 7 were removed. Table 7 listed generators that are not stationary engines and are not regulated. These engines are parts of motivators, which are mounted on flatbed trailers and used to move shovels from location to location at the Mission Complex facility. These portable generators are not considered stationary sources as they do not meet the definition of stationary source in Section 302(z) of the Clean Air Act. Consequently, emissions from these units are not included in the source's potential-to-emit or in the permit. The following two paragraphs were taken from the Part 71 Federal Operating Permit Statement of Basis for ASARCO's Mission Complex – San Xavier Permit No. TO-ROP 15-01 Section 5. Inapplicable Requirements which supports this determination.

However, the definition excludes any engine that “remains or will remain at a location for more than 12 consecutive months... “A location is any single site at a building, structure, facility, or installation.” Engines, such as the engines on ASARCO's motivators, that are located at a facility but moved around the facility, are not stationary engines unless they remain at the same location within the facility for more than 12 months. The three engines used in the motivators meet the definition of nonroad engines 40 CFR 1068.30 and are not subject to NSPS or NESHAP requirements, as long as they do not remain at one location within the facility for more than 12 months.

There is an exception to the nonroad definition for engines that replace stationary engines. Subsection (2)(iii) of the nonroad engine definition provides that, “[a]ny engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.” Therefore, “[p]ortable engines that replace existing stationary engines at the same location on a temporary basis and that are intended to perform the same or similar functions are considered stationary engines.” In this case, ASARCO has indicated that its motivators are not used to temporarily replace an existing stationary engine at the facility.

Table 1 of the Equipment List in Attachment 2 of the existing permit was updated. As a result of a facility change without revision, received May 17, 2019, the capacity of the conveyors to the secondary crusher (M309-E2 and M309-E-6) were changed from 1,750 TPH to 2,250 TPH.

Table 3 of the Equipment List in Attachment 2 of the existing permit was amended as a result of a minor revision, received May 12, 2019. The amendments include the following changes to the specifications in the table:

- Radial Stacker (10-105) transfer point PFOPS-3 and Wet Scrubber-SSOPS-2 (10-114) are NSPS affected facilities.
- The design capacity of the radial stacker was changed to 4,500 TPH.
- The emission point of the radial stacker was changed to PFOPS-3.

Conveyor Belt transfer point PFOPS-2 was incorrectly listed as not being an NSPS affected facility. The NSPS applicability of the transfer point was changed from no to yes. Emission Point PFOPS-3 was removed from the conveyor (10-103) emission point column and reassigned to the radial stacker (10-105) emission point column.

Table 6 of the Equipment List in Attachment 2 was updated as a result of a facility change without revision, received July 17, 2019. The Waste Water Treatment Plant generator was removed from the table. The NESHAP applicable generator was replaced with an NSPS applicable generator. The new NSPS generator (Equipment ID WWTP GEN was added to Table 7 of the Equipment List in Attachment 2.

Attachment 3 – Site and Visual Observation Map

No Changes

Attachments 4 – Schedule of Performance Tests

PDEQ removed the Permit Conditions, from the previous permit, that required repeat performance tests once per permit term for air pollution control equipment. PDEQ has determined that the conditions requiring continuous monitoring of performance indicators for the Baghouses and Wet Scrubbers and the CAM Plans for PSEUs are adequate to determine continuing compliance with emission limitations in the permit. PDEQ reserves the right at anytime to request ASARCO to conduct a performance test on any device if there is a reason to believe the device is not being maintained and causing an exceedance of an emission limitation.

X. INSIGNIFICANT ACTIVITIES

The following activities are considered insignificant pursuant to PCC 17.04.340(A)(114) and EPA “White Paper for Streamline Development of Part 70 Permit Applications”, 7/10/95:

- Landscaping, building maintenance or janitorial activities
- Diesel and fuel storage tanks with a capacity of 40,000 gallons or less,
- Batch mixers with a rated capacity of 5 cubic feet or less,
- Hand-held or manually operated equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding, or turning of ceramic art work, precision parts, leather, metals, plastics, fiberboard, masonry, carbon, glass or wood,
- Internal combustion (IC) engine-driven compressors, IC engine-driven electrical generator sets, and IC engine-driven water pumps used only for emergency replacement or standby service,
- Lab equipment used exclusively for chemical and physical analyses,
- Storage and Distribution Tanks: Ammonia Nitrate Storage Hoppers located at the Mission Mill and

- South Mill areas, storage and process holding tanks listed below:

| Tank | Date | Chemical | Capacity |
|-------------|--------------|--------------------------------|-----------------|
| N- 1 | approx. 1960 | MIBC | 16,000 |
| N-2 | approx. 1960 | Sodium Hydrosulfide | 10,000 |
| N-3 | approx. 1960 | Sodium Hydrosulfide | 10,000 |
| N-4 | approx. 1960 | Sodium Silicate | 15,500 |
| N-5 | Vendors tank | Xanthate Blend | 7,800 |
| N-6 | Vendors tank | AERO 4037 | 8,500 |
| N-7 | Vendors tank | Cytec- AD- 100 | 8,400 |
| N- 8 | approx. 1960 | Sodium Hydrosulfide | 10,000 |
| N-9 | approx. 1960 | Pine Oil | 17,000 |
| N- 10 | approx. 1960 | Pine Oil | 3,300 |
| N-11 | approx. 1991 | C-530 (Phosphonate Terpolymer) | 4,500 |
| N-12 | approx. 1960 | "Milk of Lime" | 80,000 |
| N-13 | approx. 1960 | "Milk of Lime" | 80,000 |

| Tank | Date | Chemical | Capacity |
|-------------|---------------|-----------------|-----------------|
| S-1 | approx. 1991 | MIBC | 8,400 |
| S-2 | approx. 1991 | Pine Oil | 10,000 |
| S-3 | approx. 1991 | Aerodri- 104 | 7,000 |
| S-4 | approx. 1991 | Cytec 4037 | 7,000 |
| S-5 | 1972(N. Tank) | "Milk of Lime" | 34,000 |
| S-6 | 1991(S. Tank) | "Milk of Lime" | 56,800 |
| S-7 | approx. 1991 | Cyanamid | 8,000 |
| S-8 | approx. 1991 | Liquid Xanthate | 8,000 |

Tripper Deck

| | | | |
|----|------|-------------------|-----|
| 1. | 1961 | Collector | 950 |
| 2. | 1961 | 2-6 mix Collector | 950 |
| 3. | 1961 | Pine Oil Emulsion | 950 |
| 4. | 1961 | Fuel Oil | 950 |
| 5. | 1961 | Cytec 4037 | 70 |

Mission Concentrator Reagent Bldg.

| | | | |
|----|-------|------------------|--------|
| 1. | 1961 | MIBC | 1,000 |
| 2. | 1961 | MIBC | 500 |
| 3. | 196 1 | MIBC | 500 |
| 4. | 196 1 | Pine Oil | 1,300 |
| 5. | 1961 | Pine Oil | 20,000 |
| 6. | 1961 | Aeroflo-Xanthate | 3,500 |
| 7. | 1961 | Cytec 4037 | 3,500 |
| 8. | 1961 | MIBC | 3,800 |

South Mill Reagent Bldg.

| | | | |
|----|------|------------|-------|
| 1. | 1991 | Oroprep | 2,300 |
| 2. | 1991 | Pine Oil | 2,300 |
| 3. | 1991 | Xanthate | 2,300 |
| 4. | 1991 | Testing | 1,600 |
| 5. | 1991 | Cytec 4037 | 2,300 |
| 6. | 1991 | F145LV | 3,800 |

Blasting:

| | | | |
|----|------|--------------------------|--------------|
| 1. | 1963 | Ammonium Nitrate (North) | 70 tons each |
| 2. | 1972 | Ammonium Nitrate (South) | 55 tons each |

Maintenance Shop Truck Painting

| | |
|---------------------------------------|-------------|
| Number of truck beds painted per year | 2 |
| Quantity of paint per truck | 25 gallons |
| Total annual paint usage | 50 gallons |
| Specific gravity of paint | 1.14 |
| Percent VOC in Paint | 20 |
| Annual VOC emissions | 95 lbs/year |

Touch N Seal Usage –Foam to Support Railcar Loading Activities

| | |
|------------------------|-----------|
| Annual estimated usage | 15 boxes |
| Weight per box | 50 lb |
| Total Usage | 750 lb |
| VOC content | 1% |
| Annual VOC Emissions | 7.5 lb/yr |