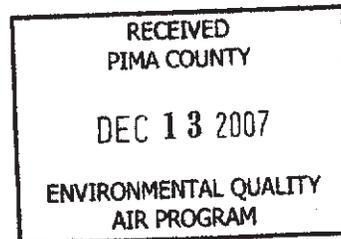




MIS-8.3.3

Mission Complex

December 13, 2007



Ms. Teresa Sobolewski
Air Program Manager
Pima County Department of Environmental Quality
33 North Stone Avenue
Suite 730
Tucson, Arizona 85701

Dear Ms. Sobolewski:

Enclosed please find the Class I ("Title V") Air Permit Renewal Application for ASARCO LLC Mission Complex in Sahuarita, Arizona. At this time, we would like to request the "permit shield" for our facility.

We look forward to hearing from you and your staff to discuss any questions you may have regarding the renewal application. Please feel free to call me at (520) 393-4671 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Ekholm". The signature is fluid and cursive.

Jamie Ekholm
Environmental Engineer

Certification of Compliance with all Applicable Requirements

Permit Number (If existing source) 2026

This certification must be signed by a Responsible Official. Applications without a signed certification will be deemed incomplete.

The responsible official is defined as a person who is in charge of principal business functions or who performs policy or decision making functions for the business. This may also include an authorized representative for such persons. For a complete definition, see Pima County Air Quality Control, Title 17, Section 17.04.340(A)(186).

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Pima County Department of Environmental Quality (PDEQ) as public record. I also attest that I am in compliance with the applicable requirements and will continue to comply with such requirements and any future requirements that become effective during the life of my permit. I will present a certification of compliance to PDEQ no less than annually and more frequently if specified by PDEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the requirements of Title 17 of the Pima County Code and any permit issued thereof.

Name (Print/Type): Mark Kalmi Title: General Manager

(Signature):  Date: 12/13/07

Certification of Truth, Accuracy, and Completeness

17.12.160(H) - Certification of Truth, Accuracy, and Completeness. Any application form, report, or compliance certification submitted pursuant to this Chapter shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the documents are true, accurate, and complete.

By my signature I, (Name) Mark Kalmi, hereby certify that based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Signature of Responsible Official of Organization: 

Title: General Manager Date: 12/13/07

STANDARD PERMIT APPLICATION FORM FOR CLASS I SOURCES

(As required by A.R.S. § 49-480, and Title 17 of the Pima County Code)

1. Permit to be issued to (Business License Name of Organization): ASARCO LLC, Mission Complex

2. Mailing Address: P.O. Box 111

City: Sahuarita State: AZ ZIP: 85629

3. Plant Name (if different than item #1): _____

4. Name (or names) of Owner or Operator: ASARCO LLC

FAX #: (520) 648-0802 Phone: (520) 648-2500

Email: mkalmi@asarco.com

5. Name of Owner's Agent: Mark Kalmi

FAX #: (520) 648-0802 Phone: (520) 648-2500

6. Plant/Site Manager/Contact Person: Jamie Ekholm

FAX #: (520) 648-0802 Phone: (520) 393-4671

Email: jekholm@asarco.com

7. Proposed Equipment/Plant Location Address: 4201 W. Pima Mine Road

City: Sahuarita State: AZ ZIP: 85629

Indian Reservation (if applicable): N/A T/R/S, Lat/Long, Elev: T16S R13E, Sec. 31 NE 1/4

8. General Nature of Business: Lat=31° 59' 50", Long=111° 02' 55" Mining & Milling of Local Copper Ores

Standard Industrial Classification Code: 1021 State Permit Class: I

9. Type of Organization: Corporation Individual Owner Partnership Government Entity Other

10. Permit Application Basis (Check all that apply): New Source General Permit Portable Source

Renewal of Existing Permit # 2026 Administrative Minor Significant

Date of Commencement of Construction or Modification: _____

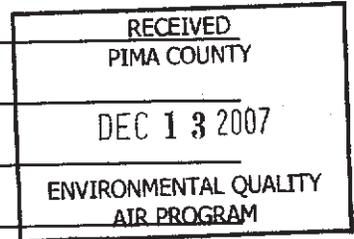
Is any of the equipment to be leased to another individual or entity? Yes No

11. Signature of Responsible Official of Organization: Mark Kalmi

Official Title of Signer: General Manager

12. Typed or Printed Name of Signer: Mark Kalmi

Date: 12/13/07 Telephone Number: (520) 648-2500



**PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT APPLICATION COMPLETENESS CHECKLIST FOR CLASS I**

SOURCE/ APPLICANT: ASARCO LLC, Mission Complex
P.O. Box 111
Sahuarita, AZ 85629

PERMIT# 2026
 NEW SOURCE _____
 RENEWAL XX
 REVISION _____

* - To be used with Standard Permit Application Form Filing Instructions

REFERENCE	REQUIREMENT	MEETS REQUIREMENT?			REMARK #	REVIEWER
		Y	N	NA		
App Form	Has the Standard Application Form been completed?	X				
App Form	Has the responsible official signed the application form?	X				
Title 17 17.12.510	Have the appropriate application fees been included with the application, if required?			X		
Title 17 17.12.160(h)	Has a Certification of Truth, Accuracy and Completeness been included?	X				
Filing Instructions 1.	Has a description of each process unit been included?	X				
Filing Instructions 2.	Has a product and raw material description been included?	X				
Filing Instructions 3 & 4.	Has a complete description of Alternate Operating Scenarios and products been included? (if applicable)	X				
Filing Instructions 5.	Has a Flow Diagram for all processes been provided?	X				
Filing Instructions 6.	Has a Material Balance been included (optional, only if emission calculations are based on material balance)?	X				
Filing Instructions 7.	Has the Emission Sources form been completed and does it include potential emissions of regulated air pollutants (including fugitives)?	X				
Filing Instructions 8.	Have all applicable SIP requirements been identified?	X				
Filing Instructions 8.	Have all applicable NSPS requirements been identified?	X				
Filing Instructions 8.	Have all applicable NESHAP requirements been identified?	X				
Filing Instructions 8.	Have all applicable Installation/Operating Permit requirements been identified?	X				
Filing Instructions 9.	Have any proposed exemptions and insignificant activities been included (if applicable)? If so, has the applicant provided sufficient evidence?	X				
Filing Instructions 10.b, 10.d	Have the maximum annual and hourly process rates for the whole plant been included?	X				

PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
 150 WEST CONGRESS ST., TUCSON, ARIZONA 85701
 PHONE: (520) 740-3340 FAX: (520) 243-7340

AIR QUALITY CONTROL
 PERMIT APPLICATION FEE WORKSHEET
 FOR TITLE V SOURCES (Class I Sources)

Company Name: ASARCO LLC, Mission Complex

Address: P.O Box 111

City, State, Zip: Sahuarita, AZ 85629

Facility Name: Mission Complex

THIS COMPLETED FORM AND YOUR REMITTANCE MUST ACCOMPANY YOUR APPLICATION

Application for a Permit and/or special processing must be accompanied by an Application Fee, as set forth in Title 17 of the Pima County Code (17.12.510).

1. New Permit - The application fee will be applied to the total permit processing costs and any balance due will be invoiced prior to the issuance of the permit. If the application fee exceeds the processing time billed, a refund will be issued for the difference.

a. Class I [17.12.510(G)].....\$13,000

2. Revision of an existing Permit - The application fee will be applied to the total revision processing costs and any balance due will be invoiced prior to issuance of the permit. If the Application Fee exceeds the processing time billed, a refund will be issued for the difference: [17.12.510(I)]

a. Significant Revision - Major Source Modification.....\$10,000.00
 b. Significant Revision -1,500.00
 c. Minor Revision500.00
 d. Permit Transfer424.00

3. A written request for accelerated processing of an application shall be provided to the Control Officer 60 days prior to filing the application. The application shall be accompanied by the standard fees plus an additional 50% surcharge, which shall be nonrefundable if the Control Officer undertakes the accelerated processing [17.12.510(N)]:

a. Class I Permit fee and accelerated processing surcharge\$19,500.00
 b. Significant Revision (Major Source modification) fee and accelerated processing surcharge15,000.00
 d. Significant Revision fee and accelerated processing surcharge.....2,250.00
 e. Minor Revision fee and accelerated processing surcharge.....750.00

Check all categories that apply and enter the total amount due below. All Application Fees must be remitted with your application. Make your check or money order payable to PDEQ.

Permit Application Fee Total \$ 0.00

Compliance Assurance Monitoring

Asarco operates several emission unit – control device combinations that are subject to the Compliance Assurance Monitoring (CAM) regulations of 40 C.F.R. Part 64. Asarco operates sources whose emissions are controlled by scrubbers, dust collectors, and water sprays. For convenience Asarco has divided the emission unit – control device combinations into groups in the following CAM submittals.

Compliance Assurance Monitoring Approach Submittal

Dust collector controlling emissions source subject to 40 C.F.R. Part 60, Subpart LL.

I. Background.

Asarco Mission Complex operates a Mikro-Pulsaire dry dust collector that controls emissions from the material transfer of ore from the conveyors exiting the secondary and tertiary crushing circuits into the fine ore bins. These units are subject to 40 C.F.R. Part 60, Subpart LL.

A. Emission Unit.

Control Device I.D. no: 311-99
Description: Mikro-Pulsaire dry dust collector

Facility: ASARCO LLC – Mission Complex
4201 West Pima Mine Road
Sahuarita, Arizona 85629

B. Applicable Regulation, Emission Limit, and Monitoring Requirement.

Regulation No.: 40 CFR § 60.382(a)
Emission Limits:
 Particulate matter: 0.05 grams per dry standard cubic meter
 Opacity: 7%
Monitoring Requirement: Visible emission observations, performance testing

C. Control Technology

Mikro-Pulsaire dry dust collector

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table CAM-1.

Table CAM-1

	Indicator No. 1	Indicator No. 2
I. Indicator	Pressure Differential	Visible Emissions
Measurement Approach	Pressure drop through the baghouse is measured daily	Visible emissions observations are taken biweekly
II. Indicator Range	An excursion is defined as a pressure differential outside 3 to 8 inches of water. Asarco will verify the pressure range indicating proper operation using manufacturer's information, best management practices, or stack testing. Based upon available data for this unit type, an excursion is defined as any reading greater than 10% above or below the stated operating range of the system. An excursion triggers an inspection, corrective action, and a reporting requirement.	If opacity is observed, a Method 9 reading is taken. An excursion is defined as opacity in excess of 7%.
III. Performance Criteria		
A. Data Representativeness	Pressure drop across the baghouse is measured with a fixed Magnehelic gauge with an accuracy of $\pm 10\%$ of full scale of indicator.	Observations are performed at the baghouse exhaust while the baghouse is operating.
B. Verification of Operational Status	N/A	N/A
C. QA/QC Practices and Criteria	Pressure gauge replaced or calibrated annually.	Personnel certified every 6 months.
D. Monitoring Frequency	Daily	Every two weeks
Data Collection Procedures	Pressure drop manually recorded	Observations manually recorded
Averaging Period	None	6 minutes

Monitoring Approach Justification.

I. Background.

The Mikro-Pulsaire dry dust collector controls emissions from the material transfer of ore from the conveyors exiting the secondary and tertiary crushing circuits into the fine ore bins.

II. Rationale for Selection of Performance Indicators.

The pressure drop through the baghouse was chosen as an indicator because it provides a means of detecting a change in effectiveness of the baghouse operation and control that can lead to an increase in emissions. An increase in pressure indicates that the cleaning cycle is not frequent enough, cleaning equipment is damaged, or the bags are becoming blinded. Decreases in pressure drop indicate significant holes and/or tears in the bags or missing bags.

Visible emission observations were chosen as an indicator because the absence of visible emissions is indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there is little emission from the exhaust. An increase in visible emissions indicates reduced baghouse performance and/or loose or torn bags.

III. Rationale for Selection of Indicator Ranges.

The baghouse pressure drop indicator range for the baghouse was selected based upon historic operations for this unit. Upon the permit's issuance, however, Asarco will verify the pressure range indicating proper operation using manufacturer's information, best management practices, or stack testing. Based upon available data for this unit type, an excursion is defined as any reading greater than 10% above or below the stated operating range of the system. Any excursion triggers an inspection and corrective action.

The indicator range of 7% for opacity was selected based upon the facility's permit and federal regulations. This baghouse controls emissions from units subject to the federal Standards of Performance for Metallic Mineral Processing Plants, 40 CFR Part 60, Subpart LL. Mission Complex's historic data demonstrate that the opacity from these units remains below 7%.

Compliance Assurance Monitoring Approach Submittal

Scrubbers controlling emission sources subject to 40 C.F.R. Part 60, Subpart LL.

I. Background.

Asarco Mission Complex operates several emission units that are subject to 40 CFR Part 60, Subpart LL, whose emissions are controlled by Ducon Wet Scrubbers. The following Compliance Assurance Monitoring Approach submittal presents the monitoring approach for each of these units.

A. Emission Unit.

Control Device I.D. no:	307-104 307-105 307-106 307-107
Description:	Ducon 108 Wet Scrubber
Control Device I.D. no:	307-108
Description:	Ducon 54 Wet Scrubber
Control Device I.D. no:	311-101
Description:	Ducon 84 Wet Scrubber
Control Device I.D. no:	20-270
Description:	Ducon Dynamic Wet Scrubber

Facility: ASARCO LLC – Mission Complex
4201 West Pima Mine Road
Sahuarita, Arizona 85629

B. Applicable Regulation, Emission Limit, and Monitoring Requirement.

Regulation No.:	40 CFR § 60.382(a)
Emission Limits:	
Particulate matter:	0.05 grams per dry standard cubic meter
Opacity:	7%
Monitoring Requirement:	Visible emission observations, performance testing

C. Control Technology

Wet Scrubbers

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table CAM-2.

Table CAM-2

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator Measurement Approach	Scrubber Operation Scrubber operation is checked daily.	Pressure Change Pressure change of the gas stream through the scrubber is measured daily for a representative of each type of scrubber. For the Ducon 108 wet scrubbers controlling emissions from the same source, each scrubber must have its pressure change measured at least once per week unless a member of the group is offline for maintenance.	Water Spray Rate The water spray rate is measured daily for a representative of each type of scrubber. For the Ducon 108 wet scrubbers controlling emissions from the same source, each scrubber must have its water spray rate measured at least once per week unless a member of the group is offline for maintenance.	Visible Emissions Visible emissions observations are taken biweekly
II. Indicator Range	An excursion is defined as an instance in which a scrubber is not operating when the underlying emission source is operating.	An excursion is defined as a pressure differential outside the range in Table CAM-2a. An excursion triggers an inspection, corrective action, and a reporting requirement.	An excursion is defined as a scrubber water spray rate outside the range in Table CAM-2a. An excursion triggers an inspection, corrective action, and a reporting requirement.	If opacity is observed, a Method 9 reading is taken. An excursion is defined as opacity in excess of 7%.
III. Performance Criteria A. Data Representativeness	N/A	The monitoring device is certified by the manufacturer to be accurate within ± 250 Pascals (± 1 in. water)	The monitoring device is certified by the manufacturer to be accurate within $\pm 5\%$ of design flow rate.	Observations are performed at the baghouse exhaust while the baghouse is operating.
B. Verification of Operational Status	N/A	N/A	N/A	N/A
C. QA/QC Practices and Criteria	N/A	Pressure gauge replaced or calibrated annually	Monitoring device replaced or calibrated annually	Personnel certified every 6 months.
D. Monitoring Frequency	Daily	Daily	Daily	Every two weeks
Data Collection Procedures	Excursion manually recorded	Pressure change manually recorded	Water spray rate manually recorded	Observations manually recorded
Averaging Period	None	None	None	6 minutes

Table CAM-2a

Ducon Wet Scrubber type	Pressure Range (inches) (indicator 1)	Water Spray Rate (gal/min.) (indicator 2)
Ducon 54 wet scrubber	3 – 6	12 – 26
Ducon 84 wet scrubber	3 – 6	15 – 30
Ducon 108 wet scrubber	6 -12	50 – 100
Ducon Dynamic wet scrubber	3 – 8	16 – 32

Monitoring Approach Justification.

I. Background.

The Ducon wet scrubbers control emissions from the secondary and tertiary crushing circuits.

II. Rationale for Selection of Performance Indicators.

Scrubber operation was chosen because it determines whether the scrubber will control emissions from the underlying emission unit. If the scrubber is not operating, emissions cannot be controlled.

The pressure change through the wet scrubber was chosen because it indicates the water level in the scrubber. Maintaining proper water flow ensures particulate removal. A high pressure change indicates that the scrubber's water level is too high while a low pressure change indicates a loss of water in the scrubber.

The water spray rate was selected as an indicator because it determines whether the scrubber is performing properly. Flow spray rates that deviate too far from the norm are an indication that the water will not adequately capture dust as it moves through the water stream.

Visible emission observations were chosen as an indicator because the absence of visible emissions is indicative of good operation and maintenance of the scrubber. When the scrubber is operating properly, there is little emission from the exhaust. An increase in visible emissions indicates reduced scrubber performance.

III. Rationale for Selection of Indicator Ranges.

Scrubber operation was chosen because Asarco operates several identical scrubbers that control emissions from a single source. Asarco will daily ensure daily that each scrubber is operating while the underlying emission source is operating.

The scrubber pressure change range for the scrubbers was selected based upon normal scrubber operation. Because Asarco has four Ducon 108 wet scrubbers that control emissions from the same source, on any given day, Asarco will only monitor the pressure change across one of the scrubbers in this group. Within a given week, Asarco will measure the pressure change across each scrubber in this group at least once unless a given scrubber is offline for extended maintenance. These scrubber systems are set in a redundant fashion

to allow one unit to be pulled offline for maintenance without affecting operations and control. This extended maintenance may preclude the ability to measure the pressure drop of each scrubber in the Ducon 108 group at least once per week. An excursion requires an inspection, corrective action, and reporting.

The scrubber water spray rate for each scrubber was selected based upon normal scrubber operation. As with the pressure change monitoring, because Asarco has four Ducon 108 wet scrubbers that control emissions from the same source, on any given day, Asarco will only monitor the water spray rate of one of the scrubbers in this group. Within a given week, Asarco will measure the water spray rate across each scrubber in this group at least once unless a given scrubber is offline for extended maintenance. These scrubber systems are set in a redundant fashion to allow one unit to be pulled offline for maintenance without affecting operations and control. This extended maintenance may preclude the ability to measure the water spray rate of each scrubber in the Ducon 108 group at least once per week. An excursion requires an inspection, corrective action, and reporting.

The indicator range of 7% for opacity was selected based upon the facility's permit and federal regulations. These scrubbers control emissions from units subject to the federal Standards of Performance for Metallic Mineral Processing Plants, 40 CFR Part 60, Subpart LL. Mission Complex's historic data demonstrate that the opacity from these units remains below 7%.

Compliance Assurance Monitoring Approach Submittal

Scrubbers controlling emission sources not subject to 40 C.F.R. Part 60, Subpart LL.

I. Background.

Asarco Mission Complex operates several emission units that are not subject to 40 CFR Part 60, Subpart LL whose emissions are controlled by Ducon Wet Scrubbers or an American Air Wet Scrubber. The following Compliance Assurance Monitoring Approach submittal presents the monitoring approach for each of these units.

A. Emission Unit.

Control Device I.D. no:	302-21 362-5-3 362-6-3 362-7-3
Description:	Ducon 108 Wet Scrubber
Control Device I.D. no:	311-109 311-110 311-111
Description:	Ducon 66 Wet Scrubber
Control Device I.D. no:	10-108
Description:	Ducon 98 Wet Scrubber
Control Device I.D. no:	30-150
Description:	Ducon 72 Wet Scrubber
Control Device I.D. no:	353-115
Description:	Ducon 21 Wet Scrubber
Control Device I.D. no:	M309-100
Description:	American Air Wet Scrubber

Facility: ASARCO LLC – Mission Complex
4201 West Pima Mine Road
Sahuarita, Arizona 85629

B. Applicable Regulation, Emission Limit, and Monitoring Requirement.

Regulation No.:	PCC § 17.16.360
Emission Limits:	
Particulate matter:	Process weight rate \leq 60,000 lb/hr E = 3.59(process weight rate) ^{0.62} Process weight rate > 60,000 lb/hr E = 17.31(process weight rate) ^{0.16}

Opacity: 20%
Monitoring Requirement: Visible emission observations, monitoring of
daily process rates

C. Control Technology

Wet Scrubbers

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table CAM-4.

Table CAM-3

	Indicator No. 1	Indicator No. 2	Indicator No. 3	
I. Indicator Measurement Approach	Scrubber Operation Scrubber operation is checked daily.	Pressure Change of Gas Stream Pressure change of gas stream through the scrubber is measured daily for a representative of each type of scrubber. For the Ducon 108 scrubber group (I.D. nos. 362-5-3, 362-6-3, and 362-7-3) and Ducon 66 wet scrubber group controlling emissions from the same source, each scrubber must have its pressure change measured at least once per week unless a member of the group is offline for maintenance.	Scrubbing Liquid Flow Rate The water spray rate is measured daily for a representative of each type of scrubber. For the Ducon 108 scrubber group (I.D. nos. 362-5-3, 362-6-3, and 362-7-3) and Ducon 66 wet scrubber group controlling emissions from the same source, each scrubber must have its water spray rate measured at least once per week unless a member of the group is offline for maintenance.	Visible Emissions Visible emissions observations are taken biweekly
II. Indicator Range	An excursion is defined as an instance in which a scrubber in not operating when the underlying emission source is operating.	An excursion is defined as a pressure differential outside the range in Table CAM-3a. An excursion triggers an inspection, corrective action, and a reporting requirement.	An excursion is defined as a scrubber water spray rate outside the range in Table CAM-3a. An excursion triggers an inspection, corrective action, and a reporting requirement.	If opacity is observed, a Method 9 reading is taken. An excursion is defined as opacity in excess of 20%.
III. Performance Criteria A. Data Representativeness	N/A	The monitoring device is certified by the manufacturer to be accurate within ± 250 Pascals (± 1 in. water)	The monitoring device is certified by the manufacturer to be accurate within $\pm 5\%$ of design flow rate.	Observations are performed at the baghouse exhaust while the baghouse is operating.
B. Verification of Operational Status	N/A	N/A	N/A	N/A
C. QA/QC Practices and Criteria	N/A	Pressure gauge replaced or calibrated annually	Monitoring device replaced or calibrated annually	Personnel certified every 6 months.
D. Monitoring Frequency	Daily	Daily	Daily	Every two weeks
Data Collection Procedures	Excursion manually recorded.	Pressure drop manually recorded	Water spray rate manually recorded	Observations manually recorded
Averaging Period	None	None	None	6 minutes

Table CAM-3a

Ducon Wet Scrubber type	Pressure Range (inches) (indicator 1)	Water Spray Rate (gal/min.) (indicator 2)
Ducon 21 wet scrubber	1 - 6	6 - 20
Ducon 66 wet scrubber	3 - 10	12 - 30
Ducon 72 wet scrubber	4 - 7	20 - 40
Ducon 98 wet scrubber	4 - 7	20 - 40
Ducon 108 wet scrubber	3 - 10	50 - 100
American Air Wet Scrubber	1 - 3	14 - 26

Monitoring Approach Justification.

I. Background.

The Ducon 108 wet scrubber, I.D. number 302-21, and the Ducon 98 wet scrubber, I.D. number 10-108, serve the primary crushing circuit. The Ducon 108 wet scrubbers, I.D. numbers 311-109 through 311-111, control emission from the material transport of ore from the fine ore bins to the rod mill fee belts. The Ducon 66 wet scrubbers, I.D. numbers 362-5-3, 362-6-3, and 362-7-3, control emissions from the primary, secondary, and tertiary crushing circuits. The Ducon 72 wet scrubber, I.D. number 30-150, controls emissions from the material transfer of ore from the coarse ore storage pile into the SAG mills. The Ducon 21 wet scrubber, I.D. number 353-115, controls emissions from by-products plant material drying process. The American Air Wet Scrubber, I.D. number M309-100, controls emissions from the M307-E13 48" belt conveyor from secondary crusher to North Mill.

II. Rationale for Selection of Performance Indicators.

Scrubber operation was chosen because it determines whether the scrubber will control emissions from the underlying emission unit. If the scrubber is not operating, emissions cannot be controlled.

The pressure change through the wet scrubber was chosen because it indicates the water level in the scrubber. Maintaining proper water flow ensures particulate removal. A high pressure change indicates that the scrubber's water level is too high while a low pressure change indicates a loss of water in the scrubber.

The water spray rate was selected as an indicator because it determines whether the scrubber is performing properly. Flow spray rates that deviate too far from the norm are an indication that the water will not adequately capture dust as it moves through the water stream.

Visible emission observations were chosen as an indicator because the absence of visible emissions is indicative of good operation and maintenance of the scrubber. When the scrubber is operating properly, there is little emission from the exhaust. An increase in visible emissions indicates reduced scrubber performance.

III. Rationale for Selection of Indicator Ranges.

Scrubber operation was chosen because Asarco operates several identical scrubbers that control emissions from a single source. Asarco will daily ensure that each scrubber is operating while the underlying emission source is operating.

The scrubber pressure change range for the scrubbers was selected based upon normal scrubber operation. Because Asarco has three Ducon 108 wet scrubbers that control emissions from the west side of the north crusher (I.D. numbers 362-5-3, 362-6-3, and 362-7-3) and three Ducon 66 wet scrubbers that control emissions from the west side of the mill (I.D. numbers 311-109 through 311-111), on any given day, Asarco will only monitor the pressure change across one of the scrubbers in each group. Within a given week, Asarco will measure the pressure change across each scrubber in each group at least once unless a given scrubber is offline for extended maintenance. These scrubber systems are set in a redundant fashion to allow one unit to be pulled offline for maintenance without affecting operations and control. This extended maintenance may preclude the ability to measure the pressure drop of each scrubber in either or both of the Ducon 108 group or Ducon 66 group at least once per week. An excursion requires an inspection, corrective action, and reporting.

The scrubber water spray rate for each scrubber was selected based upon normal scrubber operation. Because Asarco has three Ducon 108 wet scrubbers that control emissions from the west side of the north crusher (I.D. numbers 362-5-3, 362-6-3, and 362-7-3) and three Ducon 66 wet scrubbers that control emissions from the west side of the mill (I.D. numbers 311-109 through 311-111), on any given day, Asarco will only monitor the water spray rate of one of the scrubbers in each group. Within a given week, Asarco will measure the water spray rate across each scrubber in each group at least once unless a given scrubber is offline for extended maintenance. These scrubber systems are set in a redundant fashion to allow one unit to be pulled offline for maintenance without affecting operations and control. This extended maintenance may preclude the ability to measure the water spray rate of each scrubber in either or both of the Ducon 108 group or Ducon 66 group at least once per week. An excursion requires an inspection, corrective action, and reporting.

The indicator range of 20% for opacity was selected based upon the facility's permit and the Pima County Code. These scrubbers control emissions from units subject to the Pima County Code. Mission Complex's historic data demonstrate that the opacity from these units remains below 20%.

Compliance Assurance Monitoring Approach Submittal

Water sprays controlling emission sources subject to 40 C.F.R. Part 60, Subpart LL.

I. Background.

A. Emission Unit.

ASARCO Mission Complex operates an emission unit that is subject to 40 C.F.R. Part 60, Subpart LL and whose emissions are controlled by water sprays. The emission unit I.D. SSOPM-3, utilizes a water spray at the transfer tower from belt M307-E21 to belt M307-E23.

Facility: ASARCO LLC – Mission Complex
4201 West Pima Mine Road
Sahuarita, Arizona 85629

B. Applicable Regulation, Emission Limit, and Monitoring Requirement.

Regulation No.:	40 C.F.R. § 60.382(b).
Emission Limits:	
Opacity:	10%
Monitoring Requirement:	Visible emission observations

C. Control Technology

Water sprays

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table CAM-4.

Table CAM-4

	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator	Water Spray Operation	Water Spray Nozzles	Visible Emissions
Measurement Approach	The water spray operation will be checked daily.	The water spray nozzles are inspected weekly.	Visible emissions observations are taken biweekly
II. Indicator Range	An excursion is defined as an inoperable water spray system while the emission unit is operating.	An excursion is defined as an observation that more than two individual nozzles at one spray system are not producing a spray.	If opacity is observed, a Method 9 reading is taken. An excursion is defined as opacity in excess of 10%.
III. Performance Criteria			
A. Data Representativeness	Inspection of water spray operations.	Inspections of spray nozzles.	Observations are performed at the emission source while it is operating.
B. Verification of Operational Status	N/A	N/A	N/A
C. QA/QC Practices and Criteria	N/A	N/A	Personnel certified every 6 months.
D. Monitoring Frequency	Daily	Weekly	Every two weeks
Data Collection Procedures	Excursion manually recorded.	Inspection results manually recorded	Observations manually recorded
Averaging Period	None	None	6 minutes

Monitoring Approach Justification.

I. Background.

The emission unit I.D. SSOPM-3, utilizes a water spray at the transfer tower from belt M307-E21 to belt M307-E23.

II. Rationale for Selection of Performance Indicators.

The operation of the water spray system while the underlying emission unit is operating will be monitored daily. Operation of the water sprays is required to prevent fugitive emissions. If the underlying emission unit is operating and the water spray is inoperable, fugitive emissions can result.

An inspection of the water spray nozzles was selected as an indicator because it ensures that water will be delivered from the spray devices. If the nozzles are plugged with debris, no water will be allowed to exit and control emissions.

Visible emission observations were chosen as an indicator because the absence of visible emissions is indicative of good operation and maintenance of the water sprays. When the water sprays are operating properly, emissions from these fugitive sources are nominal. An increase in visible emissions indicates reduced water spray performance.

III. Rationale for Selection of Indicator Ranges.

Any instance in which the underlying emission unit is operating and the water spray system is inoperable constitutes an excursion that requires an inspection and corrective action.

Establishing an excursion as more than two spray nozzles at one spray system that are not producing a spray is based upon current knowledge of the system. Performance of the spray system is not significantly impeded if only one or two nozzles are inoperable. Thus, it is inappropriate to define an excursion when only two nozzles are inoperable. After more nozzles become inoperable, however, dust suppression will diminish.

The indicator range of 10% for opacity was selected based upon the facility's permit and federal regulations. These scrubbers control emissions from units subject to the federal NSPS. Mission Complex's historic data demonstrate that the opacity from these units remains below 10%.

Compliance Assurance Monitoring Approach Submittal

Water sprays controlling emission sources not subject to 40 C.F.R. Part 60, Subpart LL.

I. Background.

A. Emission Unit.

ASARCO Mission Complex operates several emission units that are not subject to 40 C.F.R. Part 60, Subpart LL and are controlled by water sprays. The following Compliance Assurance Monitoring Approach submittal presents the monitoring approach for each of these units. Water sprays are used at the following emission points:

1. HFOPM-1, Water spray located at the truck unloading station at the primary crusher.
2. HFOPM-2, Water spray located at discharge to Coarse Ore storage.
3. HFOPN-1, Water spray at the truck unloading station at the north circuit.
4. HFOPN-2, Water spray located at discharge to coarse ore storage.
5. SSOPN-5, Water Spray located on belt 361-29 to wet material which drops to belt 361-30.
6. HFOPS-1, Water spray located at the south circuit
7. HFOPS-2, Water spray located at head of belt 10-105 to wet material dropping onto coarse ore storage.

B. Applicable Regulation, Emission Limit, and Monitoring Requirement.

Regulation No.:	PCC § 17.16.130.
Emission Limits:	
Opacity:	20%
Monitoring Requirement:	Visible emission observations

C. Control Technology

Water sprays

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table CAM-5.

Table CAM-5

	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator	Water Spray Operation	Water Spray Nozzles	Visible Emissions
Measurement Approach	The water spray operation will be checked daily.	The water spray nozzles are inspected weekly.	Visible emissions observations are taken biweekly
II. Indicator Range	An excursion is defined as an inoperable water spray system while the emission unit is operating.	An excursion is defined as an observation that more than two individual nozzles at one spray system are not producing a spray.	If opacity is observed, a Method 9 reading is taken. An excursion is defined as opacity in excess of 10%.
III. Performance Criteria			
A. Data Representativeness	Inspection of water spray operations.	Inspections of spray nozzles.	Observations are performed at the emission source while it is operating.
B. Verification of Operational Status	N/A	N/A	N/A
C. QA/QC Practices and Criteria	N/A	N/A	Personnel certified every 6 months.
D. Monitoring Frequency	Daily	Weekly	Every two weeks
Data Collection Procedures	Excursion manually recorded.	Inspection results manually recorded	Observations manually recorded
Averaging Period	None	None	6 minutes

Monitoring Approach Justification.

I. Background.

The water sprays control fugitive dust emissions from several sources that are not subject to 40 C.F.R. Part 60, Subpart LL..

II. Rationale for Selection of Performance Indicators.

The operation of the water spray system while the underlying emission unit is operating will be monitored daily. Operation of the water sprays is required to prevent fugitive emissions. If the underlying emission unit is operating and the water spray is inoperable, fugitive emissions can result.

An inspection of the water spray nozzles was selected as an indicator because it ensures that water will be delivered from the spray devices. If the nozzles are plugged with debris, no water will be allowed to exit and control emissions.

Visible emission observations were chosen as an indicator because the absence of visible emissions is indicative of good operation and maintenance of the water sprays. When the water sprays are operating properly, emissions from these fugitive sources are nominal. An increase in visible emissions indicates reduced water spray performance.

III. Rationale for Selection of Indicator Ranges.

Any instance in which the underlying emission unit is operating and the water spray system is inoperable constitutes an excursion that requires an inspection and corrective action.

Establishing an excursion as more than two spray nozzles at one spray system that are not producing a spray is based upon current knowledge of the system. Performance of the spray system is not significantly impeded if only one or two nozzles are inoperable. Thus, it is inappropriate to define an excursion when only two nozzles are inoperable. After more nozzles become inoperable, however, dust suppression will diminish.

The indicator range of 20% for opacity was selected based upon the facility's permit and the Pima County Code. These scrubbers control emissions from units subject to the PCC. Mission Complex's historic data demonstrate that the opacity from these units remains below 20%.

Compliance Assurance Monitoring Approach Submittal

Dust collectors at the Tripper Deck

I. Background.

At Asarco Mission Complex, the Tripper Deck's emissions are controlled by six baghouses. However, the system was designed so that compliance can be achieved with fewer than all baghouses operating. Only one CAM submittal is being prepared for this emission unit – control device operation because more than one control device operates to control emissions. This unit is subject to subject to 40 C.F.R. Part 60, Subpart LL.

A. Emission Unit.

Control Device I.D. nos:	M311-E37 M311-E38 M311-E39 M311-E40 M311-E78 M311-E79
Description:	Wheelabrator Dust Collector
Facility:	ASARCO LLC – Mission Complex 4201 West Pima Mine Road Sahuarita, Arizona 85629

B. Applicable Regulation, Emission Limit, and Monitoring Requirement.

Regulation No.:	40 CFR § 60.382(a)
Emission Limits:	
Particulate matter:	0.05 grams per dry standard cubic meter
Opacity:	7%
Monitoring Requirement:	Visible emission observations, performance testing

C. Control Technology

Wheelabrator Dust Collector

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table CAM-6.

Table CAM-6

	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator	Baghouse Operation	Pressure Differential	Visible Emissions
Measurement Approach	Baghouse operation is checked every day that the tripper car has dumped ore into the fine ore bins	Pressure drop through one of the baghouses at the tripper deck is measured daily	Visible emissions observations are taken biweekly
II. Indicator Range	As excursion is defined as an instance in which a baghouse is not operating when the tripper car has dumped ore into the fine ore bins, unless the baghouse has been removed from operation for maintenance. An excursion triggers an inspection, corrective action, and a reporting requirement.	An excursion is defined as a pressure differential outside 1 to 6 inches of water. Asarco will verify the pressure range indicating proper operation using manufacturer's information, best management practices, or stack testing. An excursion triggers an inspection, corrective action, and a reporting requirement.	If opacity is observed, a Method 9 reading is taken. An excursion is defined as opacity in excess of 7%.
III. Performance Criteria	N/A	Pressure drop across the baghouse is measured with a fixed Magnehelic gauge with an accuracy of $\pm 10\%$ of full scale of indicator.	Observations are performed at the baghouse exhaust while the baghouse is operating.
A. Data Representativeness	N/A		
B. Verification of Operational Status	N/A	N/A	N/A
C. QA/QC Practices and Criteria	N/A	Pressure gauge replaced annually.	Personnel certified every 6 months.
D. Monitoring Frequency	Daily	Daily	Every two weeks
Data Collection Procedures	Excursion manually recorded	Pressure drop manually recorded	Observations manually recorded
Averaging Period	None	None	6 minutes

Monitoring Approach Justification.

I. Background.

The Wheelabrator Dust Collectors control emissions from the tripper deck. The tripper deck was constructed so that not all the baghouses had to be operated to control emissions from the unit. Operation of an individual baghouse is triggered when the tripper car dumps ore into the ore bins that the baghouse primarily controls. While each baghouse primarily controls emissions from a section of the tripper deck, the tripper deck was constructed so that up to two baghouses may be down for maintenance and emissions from the tripper deck, as a whole, are controlled within permit limits. In other words,

emissions from each section of the tripper deck is not wholly controlled by a single baghouse.

II. Rationale for Selection of Performance Indicators.

Baghouse operation was chosen as an indicator because the baghouses act in concert to control emissions from the tripper deck. The first indicator of proper operation is whether a baghouse operates when the tripper car has dumped ore into the fine ore bins, unless the baghouse has been removed from operation for maintenance.

The pressure drop through the baghouse was chosen as an indicator because it provides a means of detecting a change in effectiveness of the baghouse operation and control that can lead to an increase in emissions. An increase in pressure indicates that the cleaning cycle is not frequent enough, cleaning equipment is damaged, or the bags are becoming blinded. Decreases in pressure drop indicate significant holes and/or tears in the bags or missing bags.

Visible emission observations were chosen as an indicator because the absence of visible emissions is indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there is little emission from the exhaust. An increase in visible emissions indicates reduced baghouse performance and/or loose or torn bags.

III. Rationale for Selection of Indicator Ranges.

If a baghouse is not operating when the tripper car dumps ore into the fine ore bins, emissions may result. Thus, failure of the baghouse to operate triggers an inspection, corrective action, and reporting.

The baghouse pressure drop indicator range for each baghouse was selected based upon historic operations data for this unit. Upon the permit's issuance, however, Asarco will verify the pressure range indicating proper operation using manufacturer's information, best management practices, or stack testing. Any excursion triggers an inspection and corrective action.

The indicator range of 7% for opacity was selected based upon the facility's permit and federal regulations. These baghouses control emissions from units subject to the federal Standards of Performance for Metallic Mineral Processing Plants, 40 CFR Part 60, Subpart LL. Mission Complex's historic data demonstrate that the opacity from these units remains below 7%.

Title V Air Quality Permit Application

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LIST OF ATTACHMENTS

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Attachment 2	Emissions Related Information, including Emissions Source Form (Section 7)
Attachment 3	Compliance Assurance Monitoring Plan Submittal
Attachment 4	Table of Requirements Not Applicable (Section 9)
Attachment 5	Site Diagrams (Section 13)
Attachment 6	Applicable Requirements and Compliance Status (Section 17)
Attachment 7	Certification of Truth, Accuracy and Completeness (Section 17)
Attachment 8	Calculations (Section 20)
Attachment 9	Standard Permit Application Form
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Attachment 11	Permit Application Completeness Checklist

EXECUTIVE SUMMARY

ASARCO LLC (Asarco) owns and operates the Mission Complex in Pima County near Sahuarita, Arizona. The Mission Complex operates pursuant to Air Quality Operating Permit No. 2026 issued by the Pima County Department of Environmental Quality on June 16, 2003. The Mission Complex currently is in compliance with all applicable provisions of its existing air quality permit. This document, including the Standard Permit Application Form constitutes Mission Complex's Title V operating permit renewal application.

General Overview of Facility

The Mission Complex currently extracts copper ores using open pit methods. Approximately 54,000 tons per day of copper ore is crushed, ground and concentrated using the conventional froth flotation method. The final product is a copper concentrate which is shipped off-site for smelting. The facility currently operates 24 hours per day, 365 days per year except during preventative maintenance, shutdown or repair of equipment.

Emissions at the Mission Complex consist primarily of fugitive and non-fugitive particulate matter ("PM") from mining and mineral processing operations. Small quantities of other criteria pollutants also are emitted from portable and combustion sources and volatile organic chemical storage activities. The Mission Complex controls fugitive particulate matter by a combination of methods including, but not limited to, retention of native vegetation, application of Envirotac II acrylic polymer and biosolids, road watering, and other good mining practices.

Emissions from metallic mineral processing operations are controlled by a variety of methods: enclosures, water sprays and in some instances, wet scrubbers and baghouses. Some of the wet scrubbers and baghouses are used to control emissions at emission points subject to the New Source Performance Standards for Metallic Mineral Processing set forth at 40 C.F.R. Part 60, Subpart LL.

Detailed information concerning the emissions at the facility, including calculations of potential emissions, data on regulated air pollutants and an identification of all emissions points are set forth in Attachment 2 (Section 7) of this Title V renewal application. Emission calculations are provided in Section 20 and are based primarily on AP-42 and past performance test data.

Applicable Requirements and Compliance

Asarco anticipates that the renewal of its operating permit, number 2026, will not require the inclusion of any additional requirements. The Title V permit as written fully encompasses the operations at Mission Complex. Accordingly, Asarco looks forward to PDEQ's renewal of the Title V permit for Mission Complex in the near future.

1. Description of the process to be carried out in each unit (include Source Classification Code).

SIC CODE = 1021

The Mission Complex mines and concentrates on a current, average daily basis 54,000 tons of copper sulfide ore. The ore is delivered to the concentrator via haul trucks. Ore trucks deliver the sulfide ore to three (3) separate ore crushers. The three crushers consist of the Mission Primary Crusher, the North Mission Primary Crusher and the South Primary Crusher.

Background:

The Mission orebody was discovered by Asarco geologists in 1955. Pre-mine development of the Mission Complex open pit mine began in the fall of 1959. Initial stripping operations made use of scrapers until the arrival of electric shovels, haul trucks, drills, and support equipment in early 1960. The mill began operation in 1961 with a designed capacity of 15,000 tons per day. Two more rod-mill sections and one flotation section were added in 1967 to increase capacity to 22,500 tons-per-day. Refinements increased capacity to 28,000 tons-per-day by 1987.

Agreements with the San Xavier District resulted in the delivery of oxide ore from the San Xavier North and San Xavier South mines to a leaching plant facility during the period May 1973 to October 1978, when oxide ores were exhausted. Royalties are paid to the Bureau of Indian Affairs (BIA) for the Tohono O'odham Nation portion of the monthly throughput. Asarco also pays rental on land used for waste dumping, tailing disposal, and water wells, plus a charge for water used from the Indian wells.

In September of 1985, Asarco increased the Mission Complex ore reserves by purchasing the Pima Mine. The "Mineral Hill" property was purchased on October 22, 1987. The South Mill began production in November 1991.

In 1993, a drilling program was initiated to delineate the potential for an underground mine to the east of the existing open pit mine. Although Asarco did some underground mining at this site, it no longer conducts any underground mining at Mission Complex.

Geology

The Mission and San Xavier ore bodies were created approximately 60 million years ago during a period of extensive volcanic and tectonic activity known as the Laramide

Revolution. During the Laramide, large masses or plutons of molten igneous rock that had been generated deep in the earth by the collision of crustal plates, intruded a thick series of sedimentary rocks that had been deposited earlier in ancient seas. Hydrothermal fluids accompanying these intrusive rocks altered the reactive sediments into a rock type known by the collective term "skarns".

Toward the end of skarn formation, metal-rich fluids deposited a suite of hypogene sulfide minerals including chalcopyrite, molybdenite, sphalerite, galena, and pyrite. The igneous intrusives eventually cooled and crystallized into irregular bodies of weakly mineralized quartz monzonite porphyry. The center of this mineralizing activity was originally located approximately 6 miles south of the Mission-Pima mines in the area of Twin Buttes. Subsequent crustal deformation folded and faulted the mineralized system, displacing a large portion to the north on a large low angle fault to its present position at the Mission Complex. A smaller segment is thought to have been displaced from further up in the system and now forms the San Xavier North ore body.

A period of erosion and oxidation followed, forming various copper and iron oxide minerals, which are still visible at the gravel-bedrock contact. The deposit was eventually covered by sand and gravel deposited from the erosion of the Sierrita Mountains located to the southwest.

Mining (SIC Code = 1021)

Mining is conducted utilizing conventional open pit mining methods. Bench heights are 40 feet and the pit slope is approximately 1:1. The bench height and pit slope are typical for open pit copper mines. Pit slopes may vary depending on the condition of the rock. Blast holes are drilled utilizing rotary air drills. Breaking of the rock is accomplished with the use of ANFO (Ammonium Nitrate and Fuel Oil). After blasting, the rock is loaded with electric shovels of varying capacities. Copper ore and overburden are transported to various locations via haul trucks. Miscellaneous support equipment (i.e., rubber tire dozers, track dozers, blades, service equipment, etc.) are also used.

Existing open pit mining activities operate 24 hours per day, 365 days per year. Ore is separated from overburden (waste rock and alluvium). The overburden is hauled to overburden deposition areas. Ore grade material is hauled to either the North Primary Crusher, the Mission Primary Crusher or the South Primary Crusher at the Metallurgical Ore Processing Plant.

Milling Unit (Metallurgical Ore Processing Plants) (SIC Code = 1021):

Mission Mill

Ore treated in the Mission concentrator is crushed in a primary crusher to minus seven inches and stored in a 130,000 ton stockpile. The ore is then retrieved from under the stockpile by use of vibrating feeders and conveyor belts and is further crushed in a fine

crushing plant to minus 5/8 inch. The fine crushing plant utilizes seven large vibrating screens and five crushers to accomplish the size reduction needed. Ore is then transported by conveyors to the Tripper deck (the top level of the mill) then to a 23,000 ton fine ore bin from which it is retrieved by a system of feeders and conveyor belts and fed into the grinding circuits. Each grinding circuit consists of one rod mill containing 4" steel rods, and two ball mills containing 2" steel balls. The rotating mills grind the ore to liberate the mineral from the waste by reducing the sizing from 5/8" to a range of 15% +65 mesh and 54% -200 mesh. A combination of six circuits, consisting of six rod mills and twelve ball mills, make up the grinding sections. Two 15½' x 18' ball mills relocated from the Sacaton Unit were added to the mill in 1989. In 1991, the flotation circuit was improved with the addition of two banks of 1,500 cubic foot flotation cells.

Ground ore is pumped to the two flotation sections, where the chalcopyrite mineral is separated from the waste material by the flotation process. Flotation is a chemical-mechanical process in which the mineral surfaces are coated with xanthate and agitated with air and pine oil for a froth. The finely ground coated mineral particles attach themselves to the air bubbles, float to the top and are mechanically removed from the flotation cells. This rough concentrate is upgraded in column flotation cells (8' diameter x 50' high) to a concentrate product that is filtered and shipped in railroad cars to Asarco Smelters at Hayden, Arizona and El Paso, Texas.

Recovery of copper values in the Mission mill varies. Finely ground reject material from the flotation process which sinks to the bottom of the flotation cells, referred to as tailing, is transported by gravity in large diameter pipes to tailing storage areas below the mill site. Water is recovered from the storage areas and reused in the mill. The in-plant water recovery system recovers and reuses 70% to 80% of the water needs of the concentrator. The remainder is currently made up in equal proportions of fresh water and Central Arizona Project water. Fresh water is pumped 3½ miles from the valley located to the east of the mine and is used as makeup water.

By-Products Plant

Mission Complex produces a by-product molybdenum concentrate. This by-product is produced by diverting the copper concentrate from the Mission Mill to the by-products plant. The by-products plant process involves additional flotation where the copper concentrate is mixed with chemicals that depress the flotation of copper minerals, reground if needed, and refloat to produce a molybdenite concentrate. This concentrate is filtered, dried and sold for recovery of the contained molybdenum, which is used as an alloying element in steel production. 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.

South Mill

The South Mill was purchased from Cyprus Minerals Company in 1989. This mill was built in 1971 and operated by Cyprus Pima Mining Company until 1983. Ore is crushed to -10" in a gyratory crusher and conveyed to a stockpile. The ore is then fed directly into 2-28' x 12' SAG (Semi-Autogenous Grinding) mills. The SAG mill discharge is screened with the screen oversized going to a recycle crusher circuit, and the undersize going to two 16½' x 19' ball mills for further grinding. The ground ore goes to flotation and regrinding where a final copper concentrate is produced in 8' x 50' column cells.

2. Descriptions of raw materials, intermediates, and product(s).

Raw Materials

The raw material used at Asarco Mission Complex consists of ore.

Products.

Copper Concentrate

The final product is a copper concentrate product consisting of copper, iron, trace metals, sulfur and silica.

Molybdenum Concentrate

Mission Complex may produce a by-product molybdenum concentrate which consists of molybdenum, iron, trace metals, sulfur and silica.

Rock

Mission Complex may sell non-ore grade rock to rock processors for use in on-site production of aggregate and other rock products. The non-ore grade rock may contain trace quantities of metals, sulfur and silica.

Tailing

Mission Complex may sell tailing for use in the production of building products which is similar to cinder blocks or slump block. The non-ore grade tailing may contain trace quantities of metals, sulfur and silica.

3. *Description of alternate operating scenario(s), if desired by applicant (include Source Classification Code).*

Molybdenum By-Products Plant (SIC Code = 1021)

When economically favorable, Asarco diverts the copper concentrate to the by-products plant for the production of molybdenum concentrate. The copper concentrate from the flotation section is treated and reground to extract molybdenum concentrate. This concentrate is dried, shipped and sold for recovery of the contained molybdenum, which is used as an alloying element for steel. Production may be temporarily suspended at the by-products plant during times of depressed molybdenum prices. Production can resume when prices recover and stabilize at a profitable level.

Incidental Sale of Rock Products

Periodically, Asarco may sell non-ore grade rock to rock processors for use in making aggregate or other rock products (including limestone and marble). The rock processors provide their own equipment and are separately permitted as portable sources. For example, CALMAT operates a sand and gravel operation under separate permit on Asarco property. In some cases, Asarco may deliver rock to the rock processor. This activity is covered in Asarco's Title V permit under the conditions governing fugitive dust emissions. See Permit 2026, Part "B", section I.C. Existing fugitive dust controls adequately address the delivery. A portable source permit issued to the rock processor adequately covers emissions from the process equipment so that this activity does not trigger any additional applicable requirements.

Incidental Sale of Tailing for Building Products

Asarco may sell non-ore grade tailing to independent processors for use in making building products similar to cinder or slump block. Asarco may deliver tailing to the building products processor in a similar fashion as described in the "Incidental sale of Rock Products." Asarco's delivery of tailings is governed by the conditions limiting fugitive dust emissions in the current Title V permit. See Permit 2026, Part "B", section I.C. Dust control and emissions from process would be addressed in a similar fashion. It is intended that only portable equipment would be used for this purpose.

Use of On-Specification Used Oil in Lieu of Virgin Fuel Oil

Asarco is currently permitted to substitute on-specification used oil in lieu of virgin fuel oil in its ANFO blasting agent as a waste minimization/pollution prevention

project provided Asarco monitors the amount of used oil used in the process each month and the used oil meets the specification outlined in the Title V permit.

4. *Description of alternate operating scenario product(s), if applicable.*

Molybdenum Concentrate

Mission Complex produces a by-product molybdenum concentrate which consists of molybdenum, iron, trace metals, sulfur and silica.

Rock

Mission Complex may sell non-ore grade rock to rock processors for use in on-site production of aggregate and other rock products. The non-ore grade rock may contain trace quantities of metals, sulfur and silica.

Tailing

Mission Complex may sell tailing for use in the production of building products which is similar to cinder blocks or slump block. The non-ore grade tailing may contain trace quantities of metals, sulfur and silica.

5. *A flow diagram of each process.*

Figure 1: Mission General Plant Layout located in section 13

Figure 2: Represents an overview of the Mission Integrated Pit, the Mission Plant Site and the Mission South Mill.

Figure 3: Represents an overview of the Mission Plantsite with the locations of Figures 5, 6, 7 and 8.

Figure 4: Represents an overview of the Mission South Mill with the locations of Figures 10 and 11.

Figure 5-11: Represents more detailed diagrams of the components identified on Figures 3 and 4.

Mission Process Flow Diagrams

Page 2: Mission Complex General Plant Overview

Page 3: Mission Mine

Page 4: Mission Complex Mission Mill - Crushing

Page 5: Mission Complex Mission Mill – North Crusher

Page 6: Mission Complex Mission Mill – Grinding

Page 7: Mission Complex Mission Mill – Flotation Sections 1 & 2

Page 8: Mission Complex Mission Mill – Flotation Section 3

Page 9: Mission Complex By-Product (Moly Plant)

Page 10: Mission Complex Mission Mill – Concentrate Dewatering & Handling

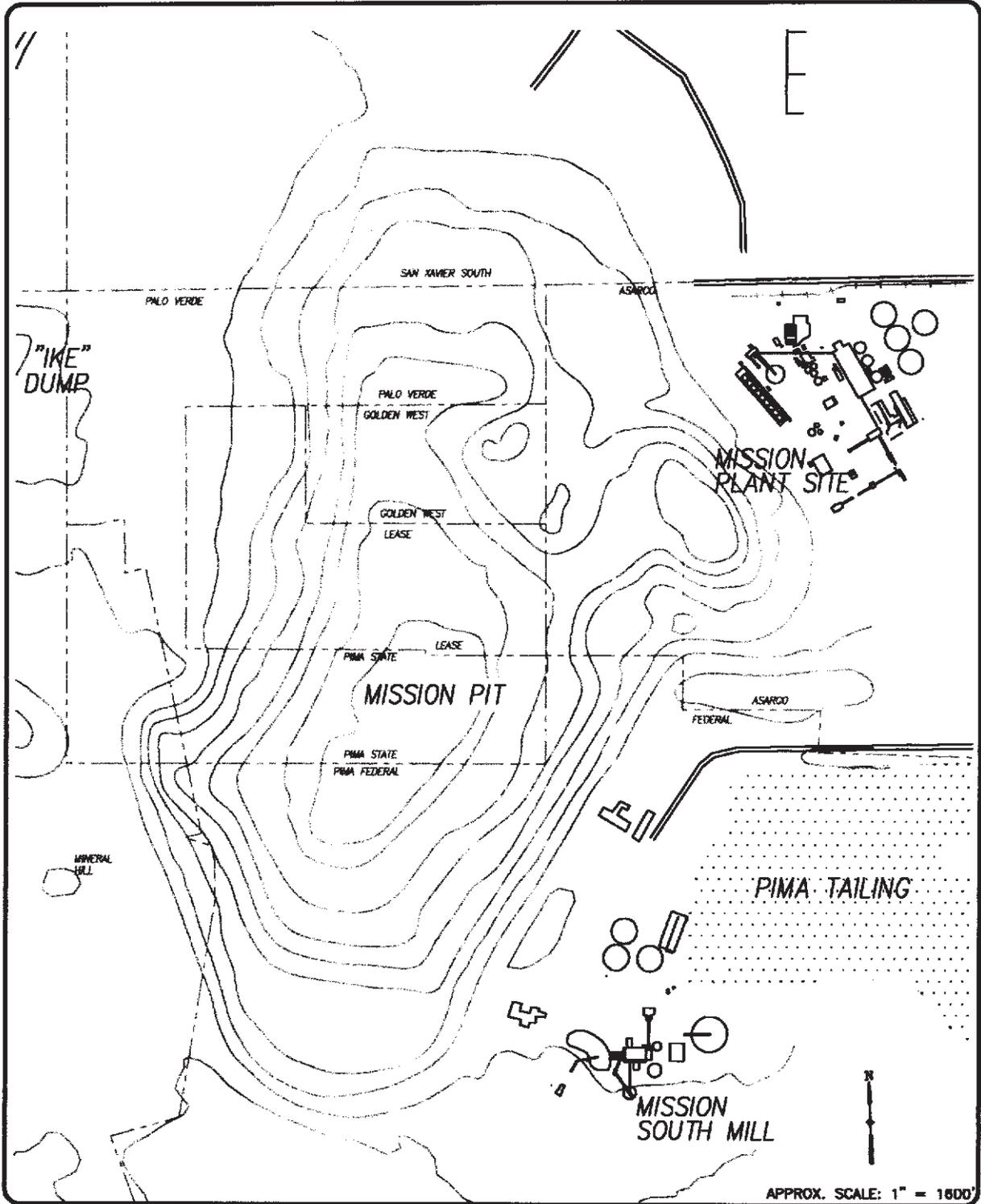
Page 11: Mission Complex Mission Mill – Lime Process

Page 12: Mission Complex South Mill – Crushing & SAG Grinding

Page 13: Mission Complex South Mill – Ball Mill Grinding

Page 14: Mission Complex South Mill – Flotation/Tailings

Page 15: Mission Complex South Mill – Concentrate Dewatering & Handling



ASARCO — MISSION AIR PERMIT

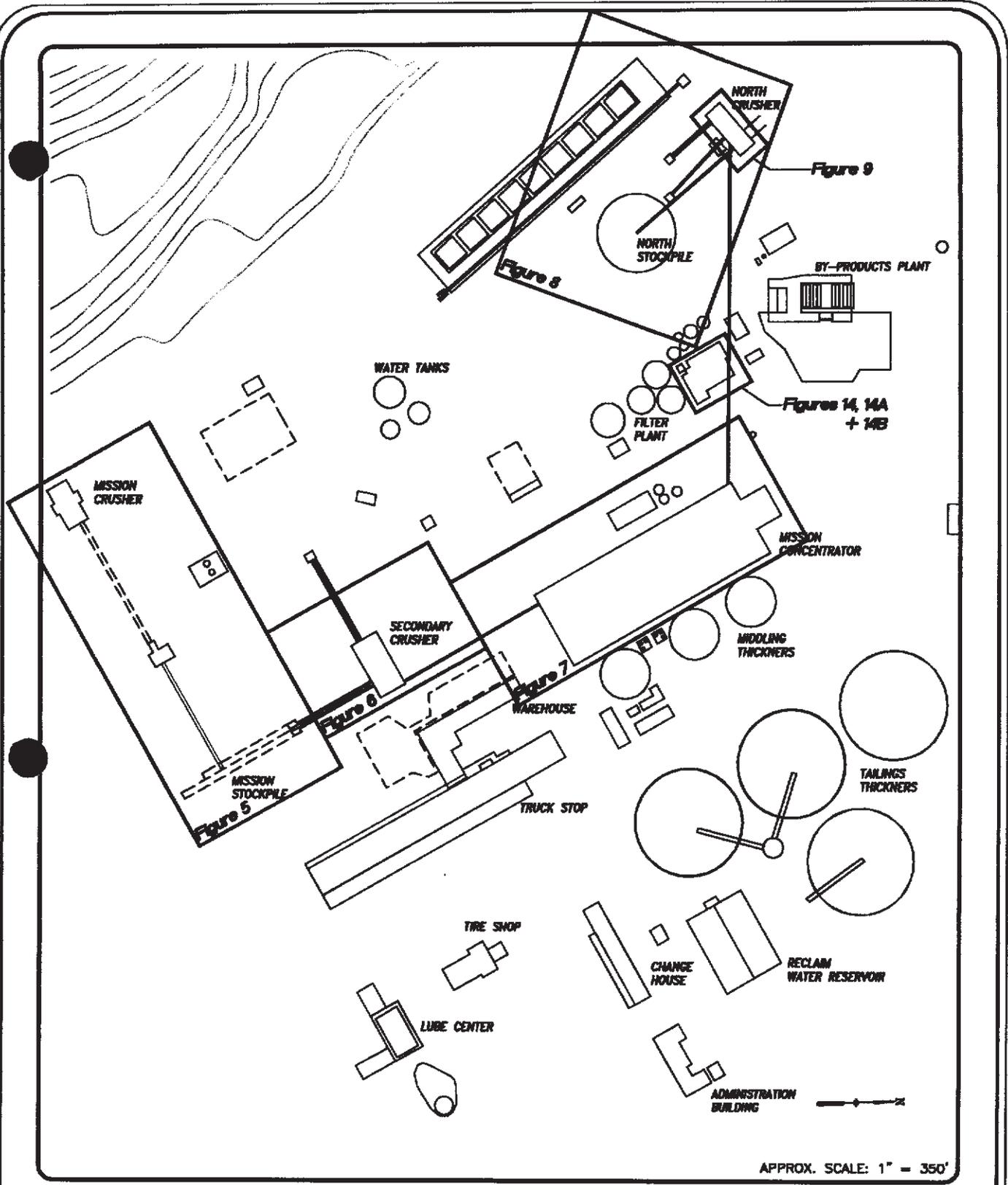
Mission Plantsite

Project No. : 934X009A

November 2007

FIGURE 2

ASARCO
MISSION COMPLEX



APPROX. SCALE: 1" = 350'

ASARCO – MISSION AIR PERMIT

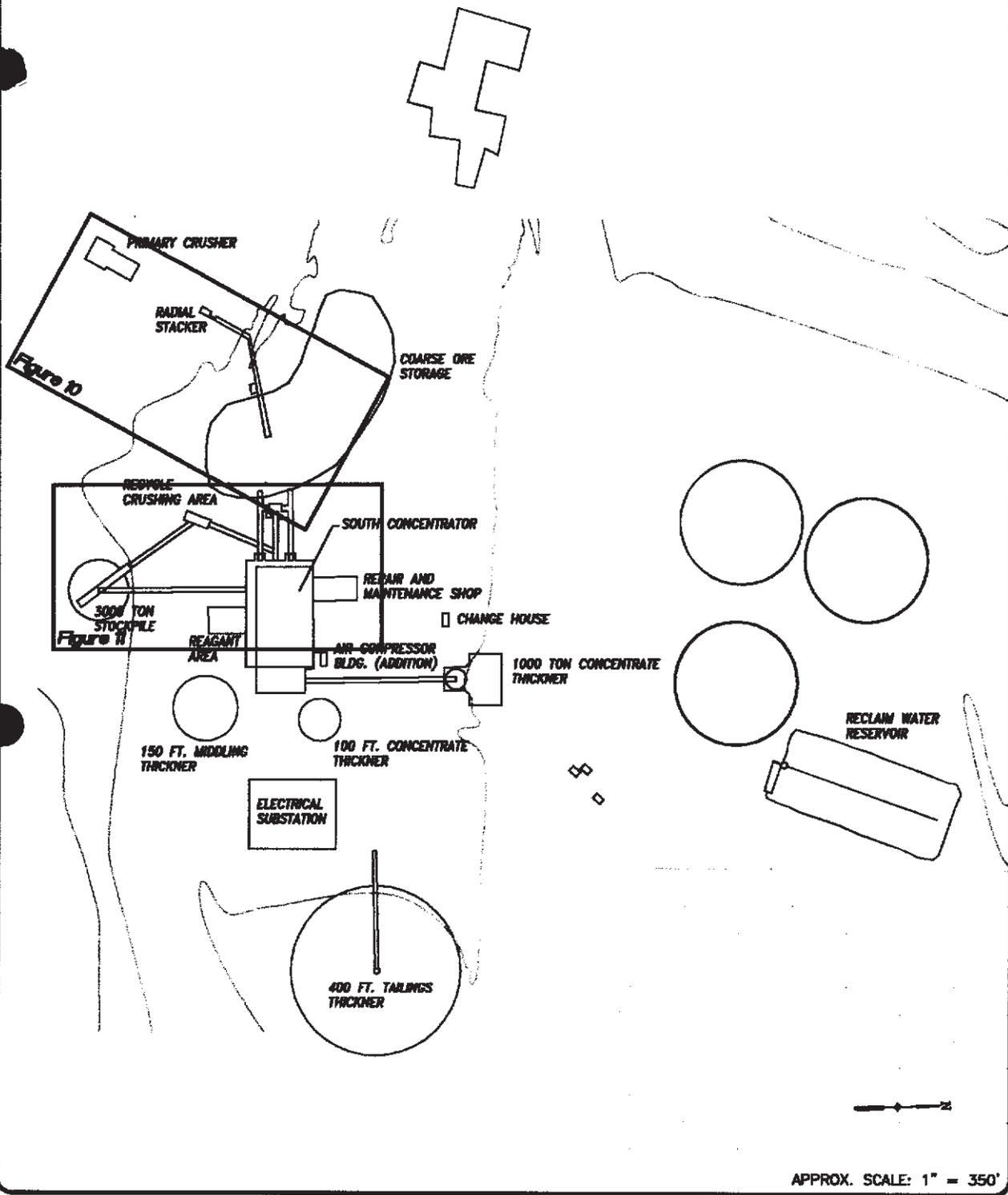
Mission Plantsite

Project No. : 934X009A

November 2007

FIGURE 3





APPROX. SCALE: 1" = 350'

ASARCO – MISSION AIR PERMIT

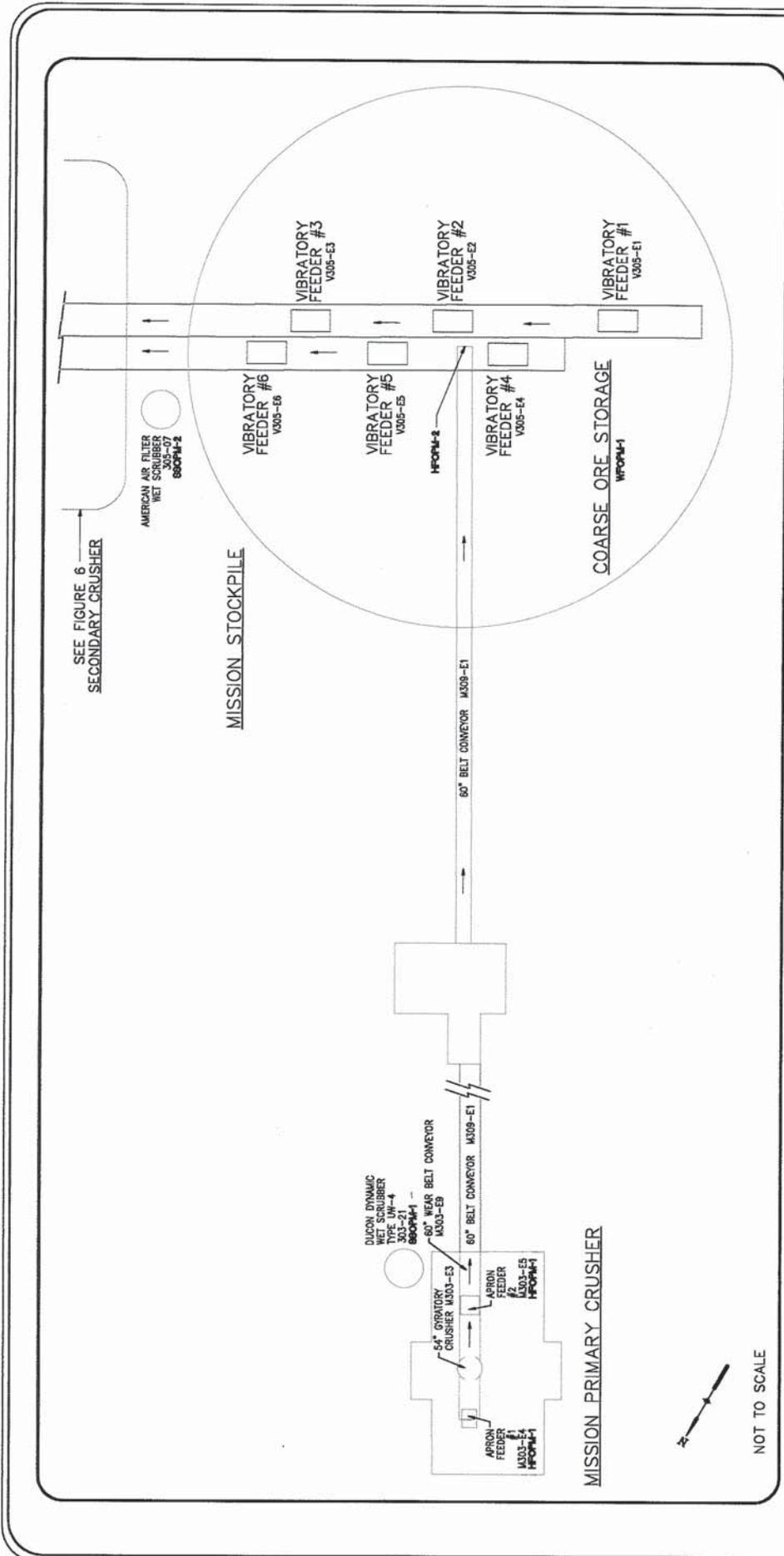
Mission South Mill

Project No. : 934X009A

November 2007

FIGURE 4



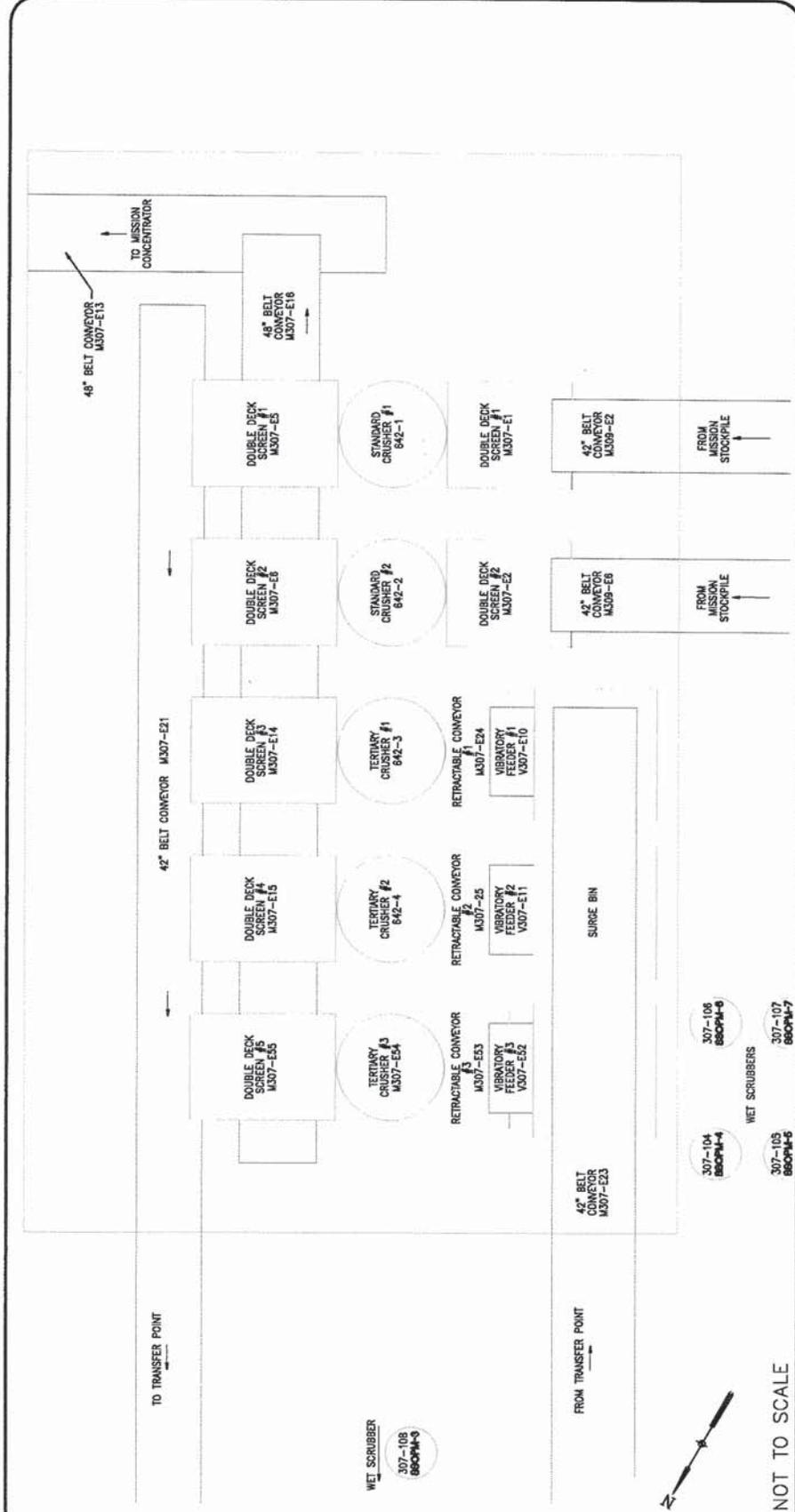


MISSION AIR PERMIT	
Mission Primary Crusher and Stockpile - Equipment Location	
Project No. 934X009A	FIGURE 5
Drawn By: DTB	Checked By: AC
Date: November 2007	

ASARCO
MISSION COMPLEX

EPN's:	SSOPM-1
	SSOPM-2
	HFOPM-1
	HFOPM-2
	WFOPM-1

NOT TO SCALE



MISSION AIR PERMIT

Mission Secondary Crusher – Equipment Location

Project No. 934X009A

Drawn By: DTB Checked By: AC Date: November 2007

FIGURE 6

FILE: D:\PROJECTS\AIR_QUALITY\1050_REV.DWG

ASARCO
MISSION COMPLEX

EPN's: SSOPM-3
SSOPM-4
SSOPM-5
SSOPM-6
SSOPM-7

NOT TO SCALE



WET SCRUBBER
307-108
(860PM-3)

WET SCRUBBERS
307-104
(860PM-4) 307-106
(860PM-5)
307-105
(860PM-6) 307-107
(860PM-7)

TO TRANSFER POINT

FROM TRANSFER POINT

48" BELT CONVEYOR
M307-E13

TO MISSION
CONCENTRATOR

DOUBLE DECK
SCREEN #1
M307-E5

STANDARD
CRUSHER #1
642-1

DOUBLE DECK
SCREEN #1
M307-E1

42" BELT
CONVEYOR
M309-E2

FROM
MISSION
STOCKPILE

DOUBLE DECK
SCREEN #2
M307-E6

STANDARD
CRUSHER #2
642-2

DOUBLE DECK
SCREEN #2
M307-E2

42" BELT
CONVEYOR
M309-E6

FROM
MISSION
STOCKPILE

DOUBLE DECK
SCREEN #3
M307-E14

TERTIARY
CRUSHER #1
642-3

RETRACTABLE CONVEYOR
#1
M307-E24

VIBRATORY
FEEDER #1
V307-E10

DOUBLE DECK
SCREEN #4
M307-E15

TERTIARY
CRUSHER #2
642-4

RETRACTABLE CONVEYOR
#2
M307-E25

VIBRATORY
FEEDER #2
V307-E11

SURGE BIN

DOUBLE DECK
SCREEN #5
M307-E55

TERTIARY
CRUSHER #3
M307-E54

RETRACTABLE CONVEYOR
#3
M307-E33

VIBRATORY
FEEDER #3
V307-E52

42" BELT
CONVEYOR
M307-E23

TO TRANSFER POINT

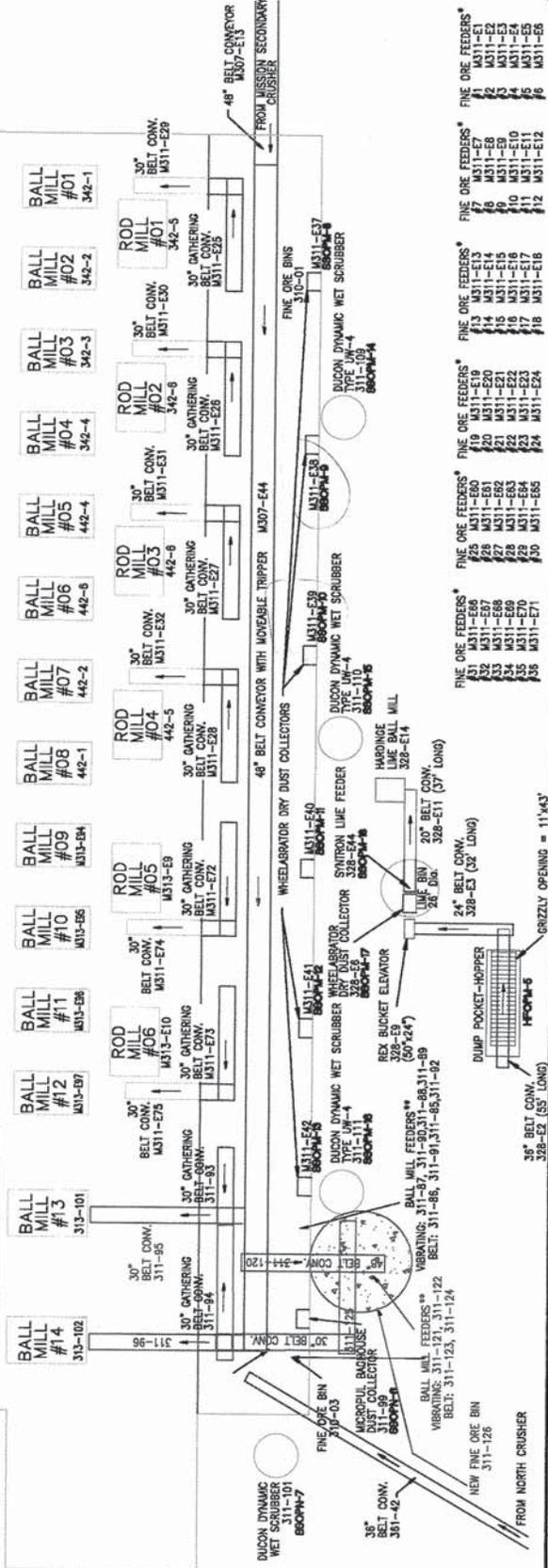
FROM TRANSFER POINT

MIDDLING THICKENERS

NOT TO SCALE

FLOTATION

MISSION CONCENTRATOR



NOTES:

- * FINE ORE FEEDERS DELIVER ORE FROM THE FINE ORE BINS TO THE GATHERING BELT CONVEYORS
- ** BALL MILL FEEDERS DELIVER ORE FROM THE FINE ORE BIN TO THE GATHERING BELT CONVEYORS

- EPN's: SSOPM-8
SSOPM-9
SSOPM-10
SSOPM-11
SSOPM-12
- SSOPM-13
SSOPM-14
SSOPM-15
SSOPM-16
SSOPM-17
- SSOPM-18
HFOPM-5
SSOPM-5
SSOPM-7

MISSION AIR PERMIT (New Hill Mill)

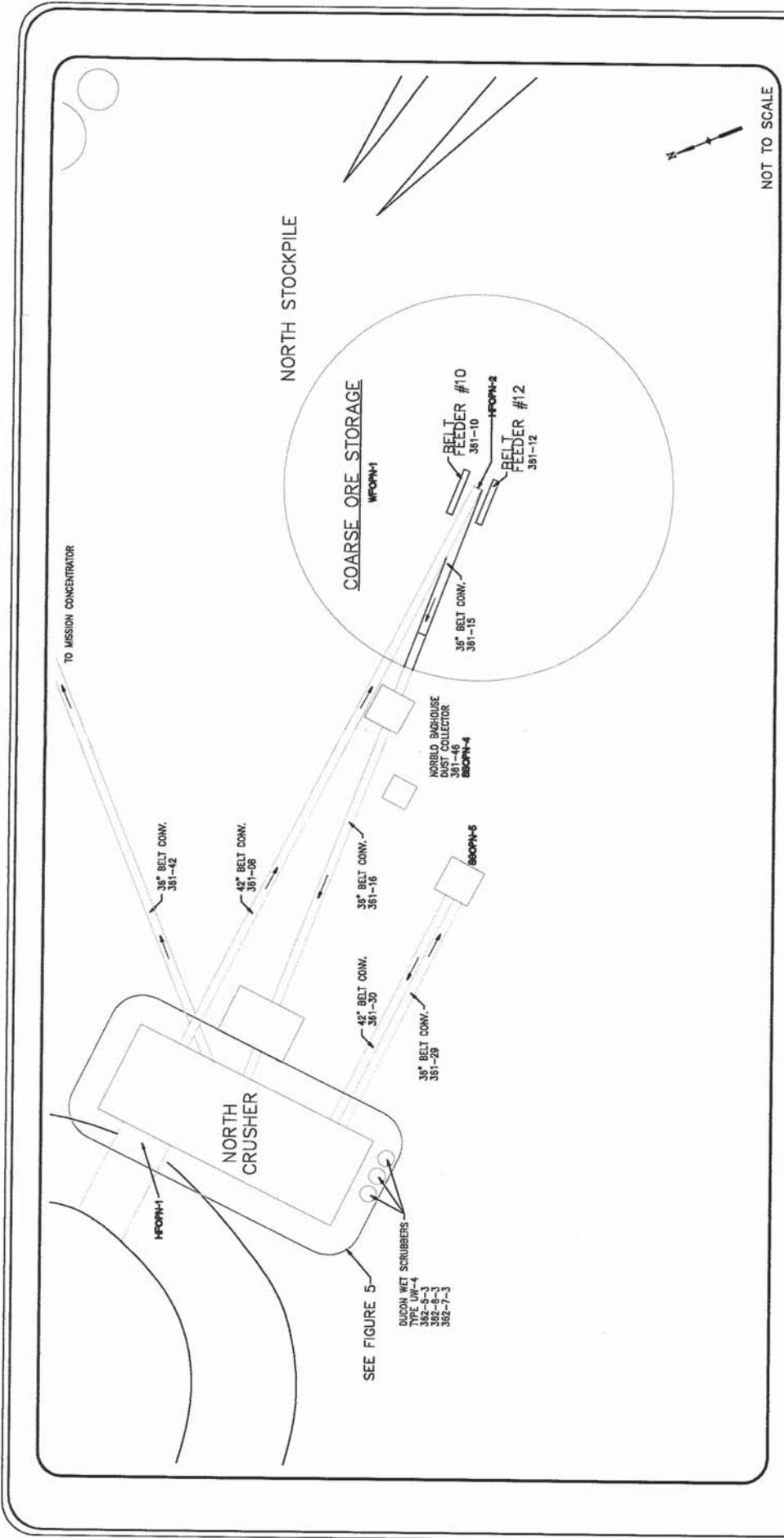
Mission Concentrator - Equipment Location

Project No. 934X009A

FIGURE 7

Drawn By: DTB Checked By: AC Date: November 2007

FILE: D:\PROJECTS\AIR_QUALITY\T050_REV2.DWG



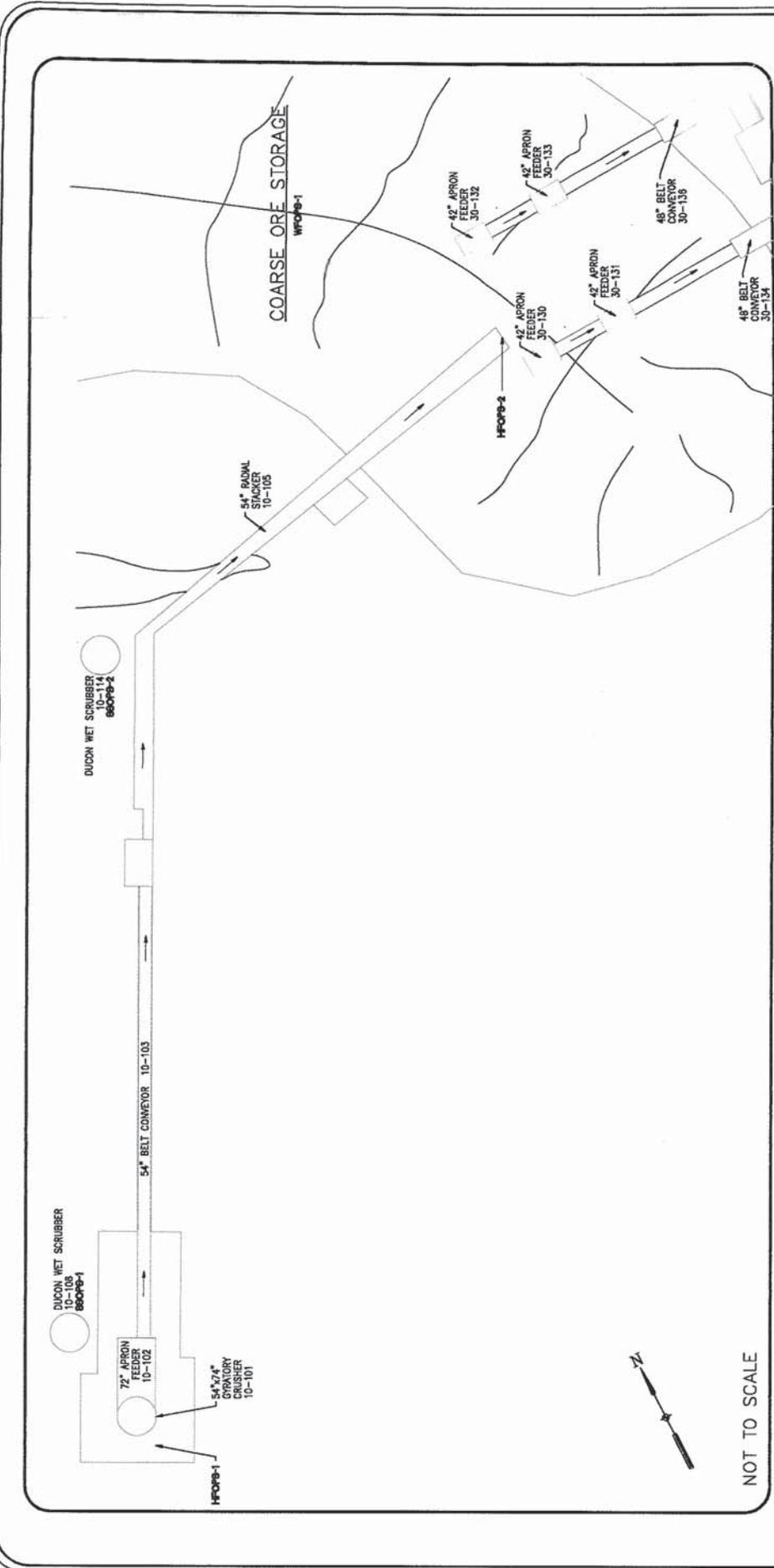
NOT TO SCALE

MISSION AIR PERMIT	
Mission North Primary Crusher and Stockpile - Equipment Location	
Project No. 934X009A	FIGURE 8
Drawn By: DTB	Checked By: AC
Date: November 2007	

ASARCO
MISSION COMPLEX

FILE: D:\PROJECTS\AIR_QUALITY\TDSO_REV.DWG

<p>EPN's:</p> <ul style="list-style-type: none"> HFOPN-1 HFOPN-2 WFOPN-1 SSOPN-4 SSOPN-5 	
---	--



MISSION AIR PERMIT

Mission South Primary Crusher and Stockpile - Equipment Location

Project No. 934X009A

Drawn By: DTB Checked By: AC Date: November 2007

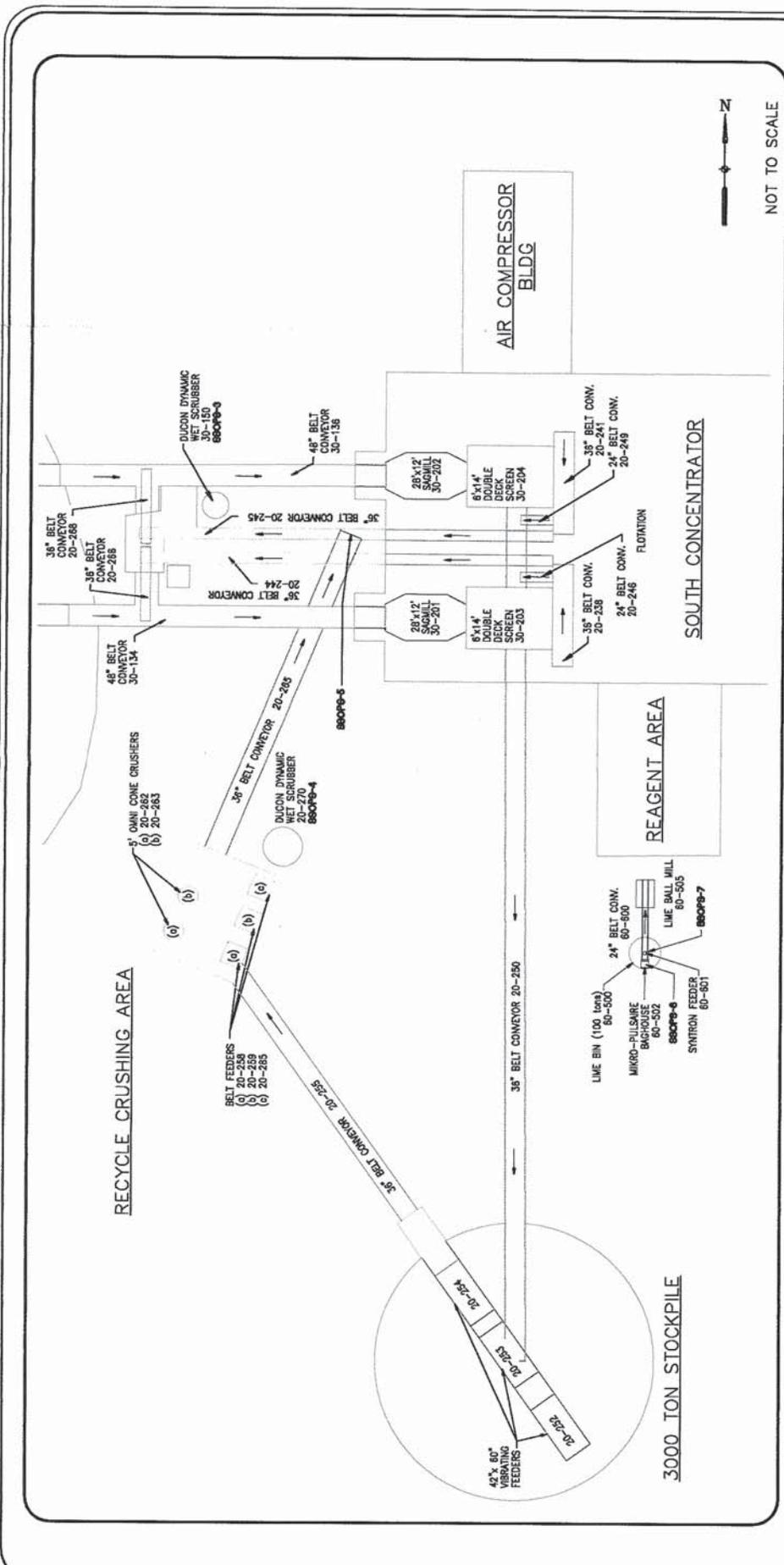
FILE: D:\PROJECTS\AIR_QUALITY\1050_REV.DWG



EPN's: SSOPS-1
 SSOPS-2
 HFOPS-1
 HFOPS-2
 WFOPS-1

NOT TO SCALE





NOT TO SCALE

MISSION AIR PERMIT	
Mission South Concentrator - Equipment Locations	
Project No. 934X009A	FIGURE 11
Drawn By: DTB	Checked By: AC
Date: November 2007	

FILE: D:\PROJECTS\AIR_QUALITY\1050_REV.DWG



EPN's:

- SSOPS-3
- SSOPS-4
- SSOPS-5
- SSOPS-6
- SSOPS-7

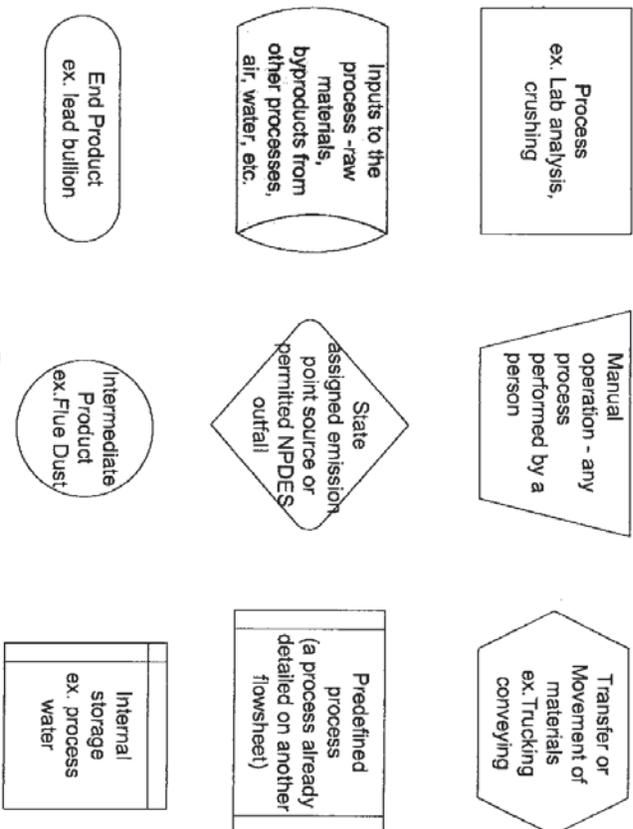
ASARCO LLC

Mission Complex - Process Flow Diagrams

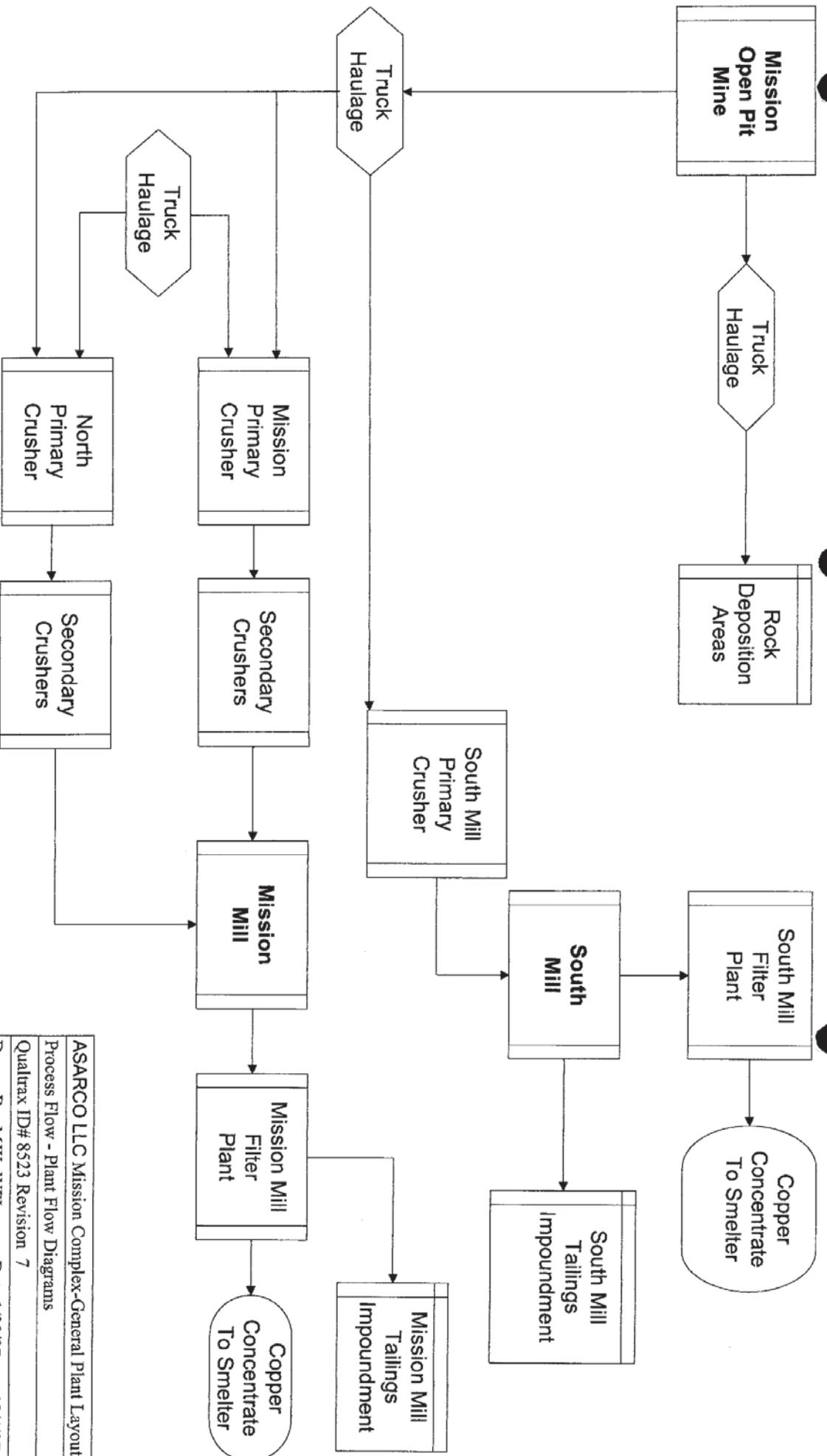
Index - Process Flow Diagrams

Mission General Plant Layout	Page 2
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Mission North Mill	Page 3
Mission Crushing / Fine Ore Bins	Page 4
North Crushing Plant	Page 5
Mission Mill Grinding, Rod and Ball Mills	Page 6
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Concentrate Dewatering & Handling	Page 15
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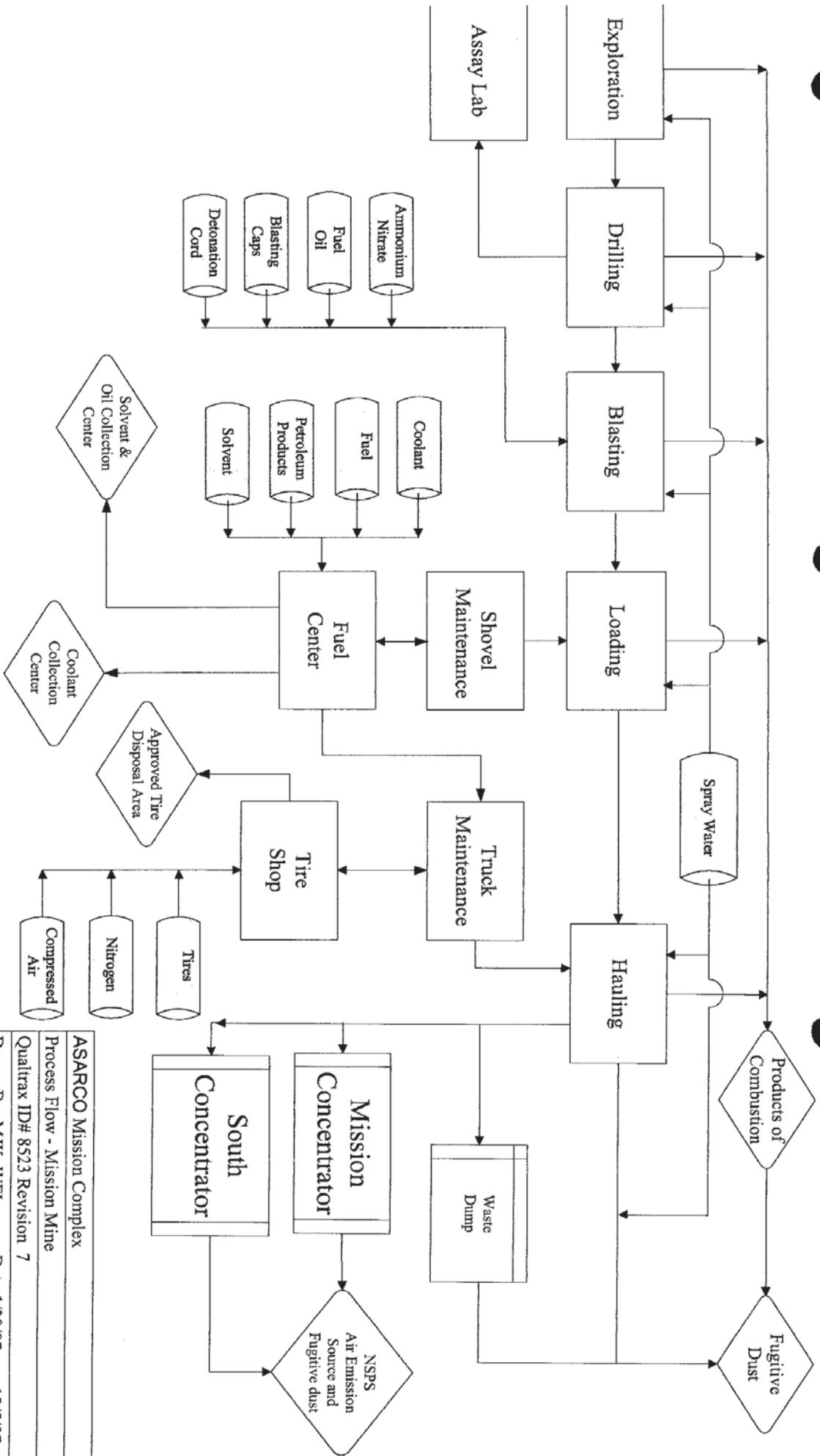
Definition of Flowchart Shapes



Mission Complex General Plant

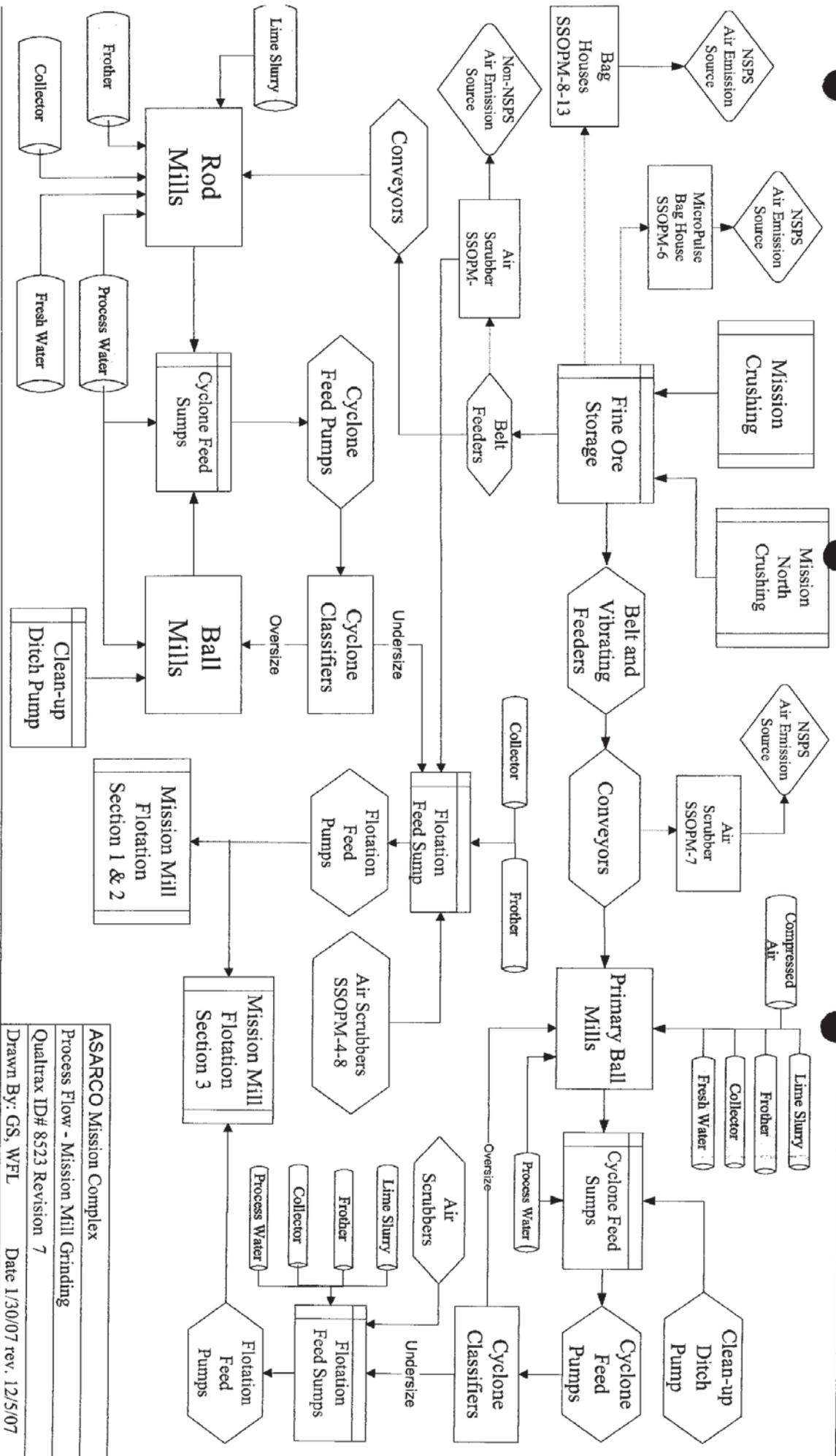


ASARCO LLC Mission Complex-General Plant Layout
 Process Flow - Plant Flow Diagrams
 Qualtrax ID# 8523 Revision 7
 Drawn By: MKK, WFL Date: 1/30/07 rev. 12/4/07



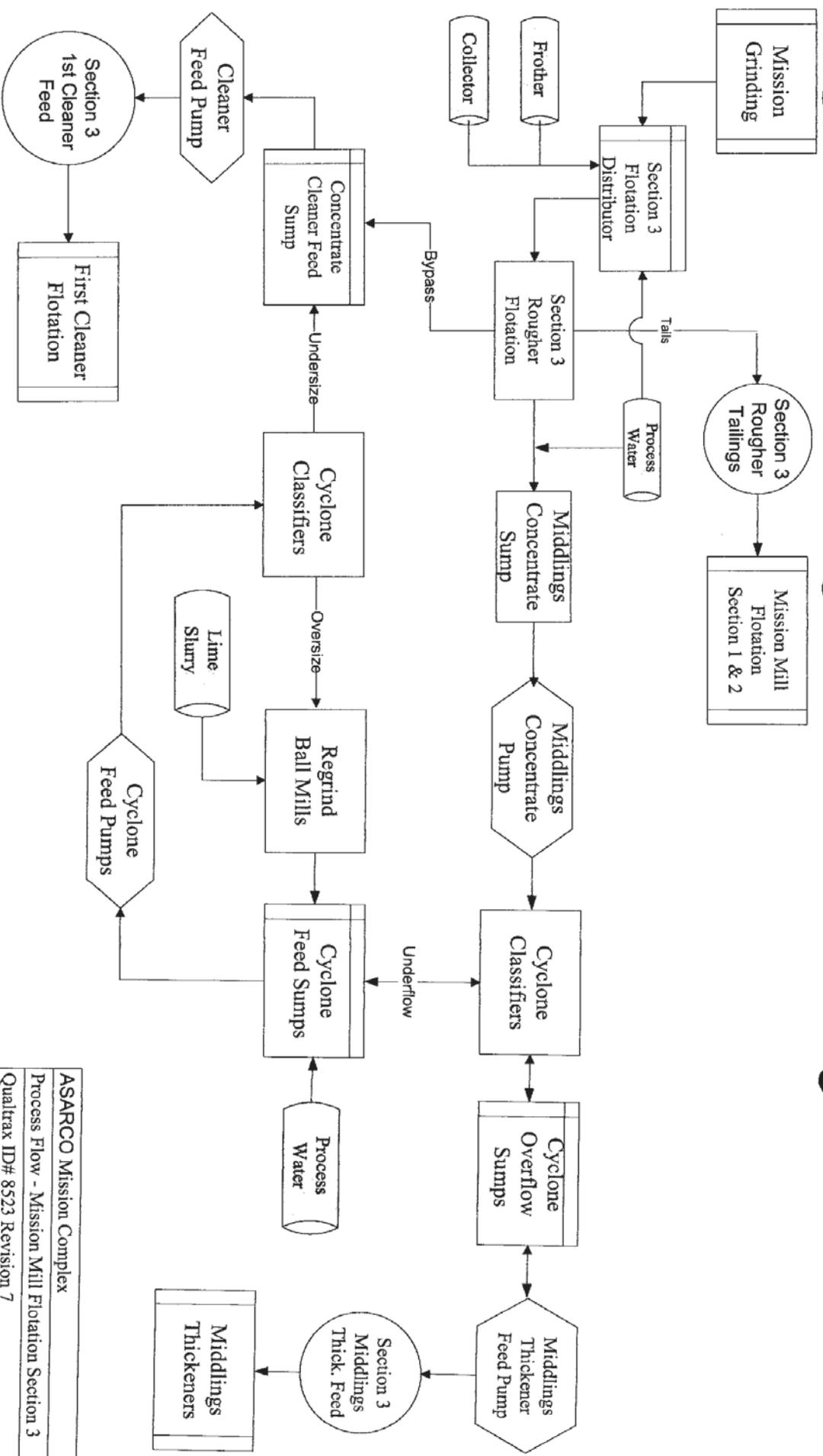
ASARCO Mission Complex
 Process Flow - Mission Mine
 Qualtrax ID# 8523 Revision 7
 Drawn By: MJK, WFL Date: 1/30/07 rev. 12/5/07

Mission Complex Mission Mill - Grinding



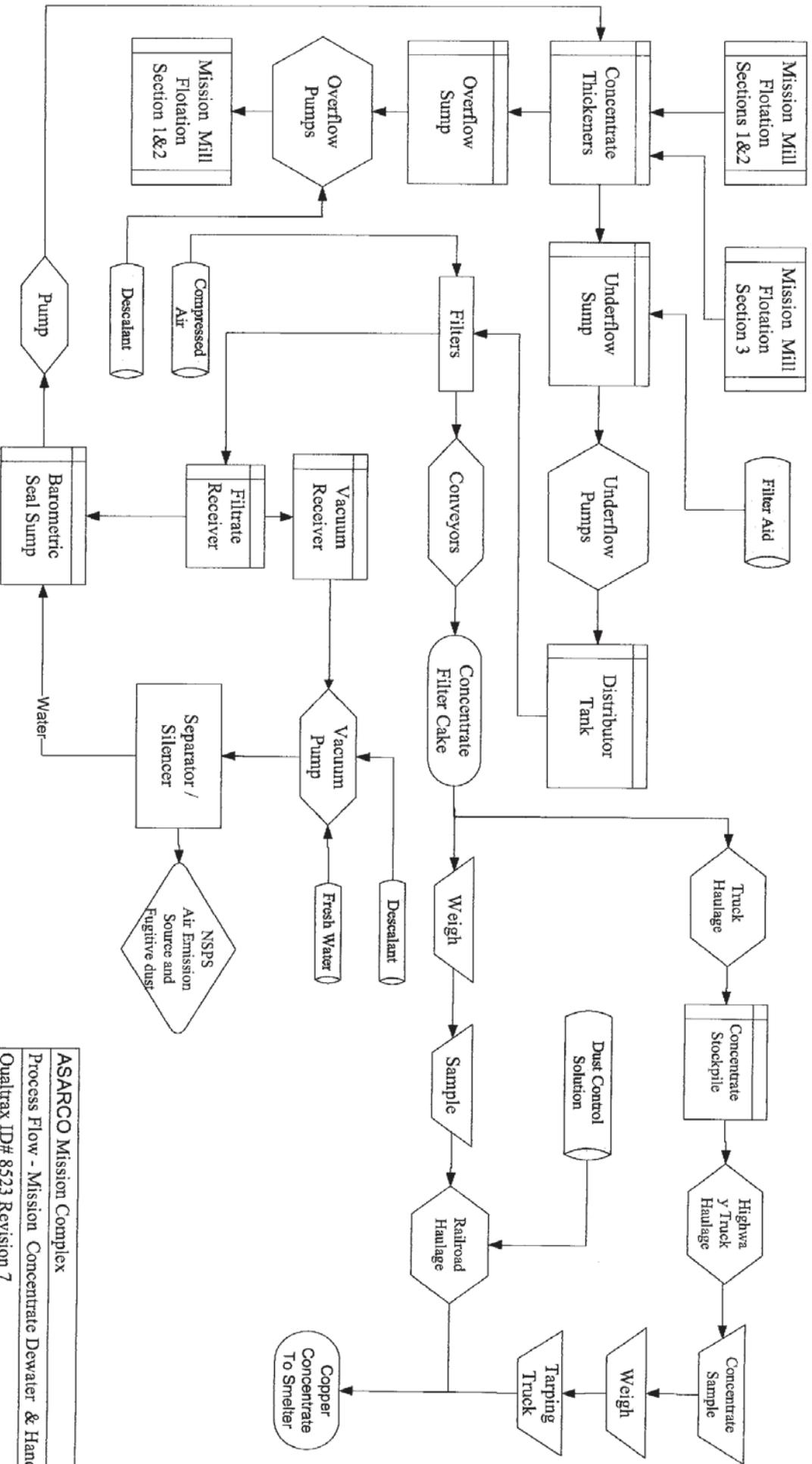
ASARCO Mission Complex
 Process Flow - Mission Mill Grinding
 Qualtrax ID# 8523 Revision 7
 Drawn By: GS, WFL Date 1/30/07 rev. 12/5/07

Mission Complex Mission Mill - Flotation Section 3



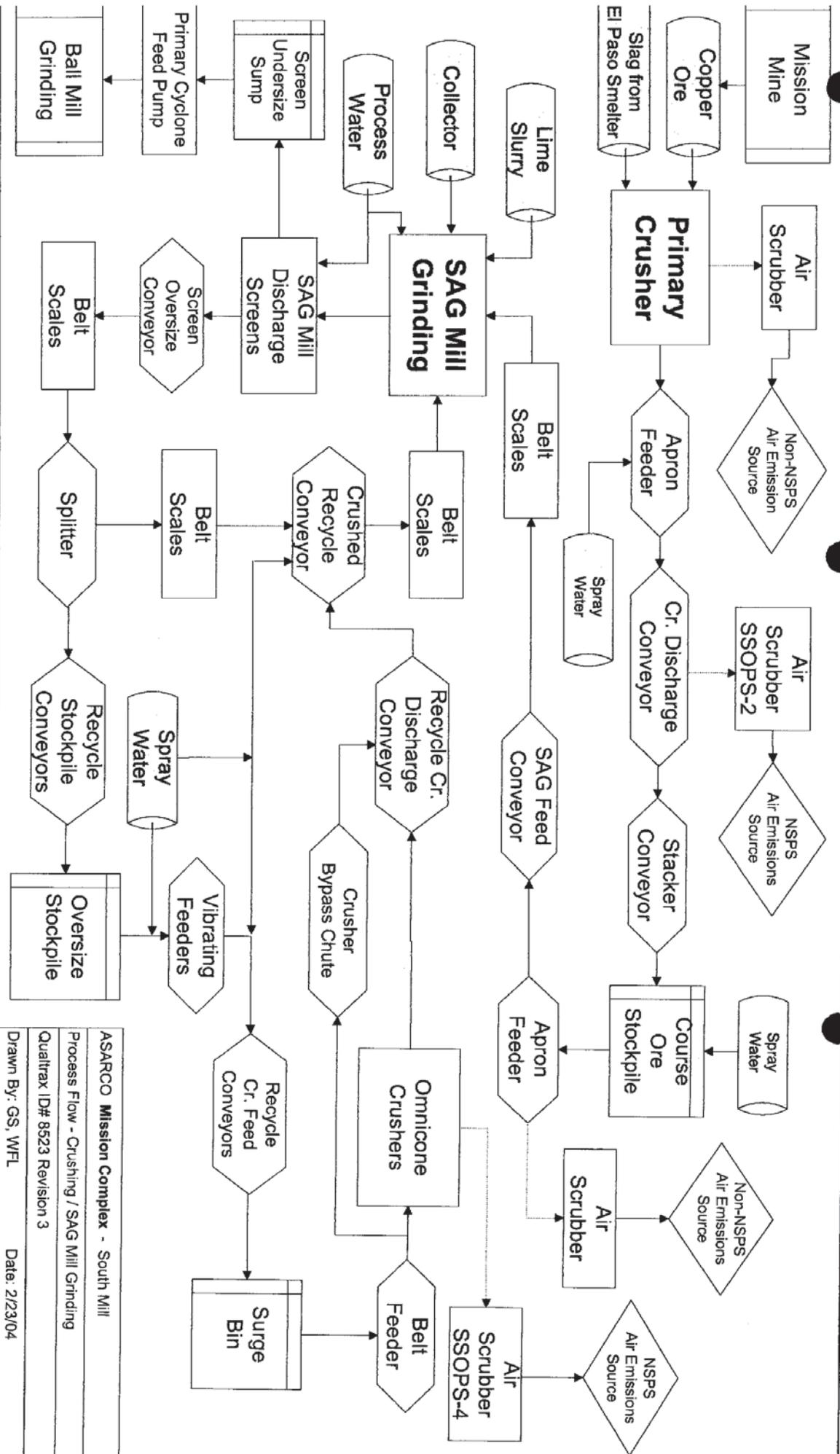
ASARCO Mission Complex
 Process Flow - Mission Mill Flotation Section 3
 Qualtrax ID# 8523 Revision 7
 Drawn By: GS, WFL Date: 1/30/07

Mission Complex Mission Mill - Concentrate Dewatering & Handling



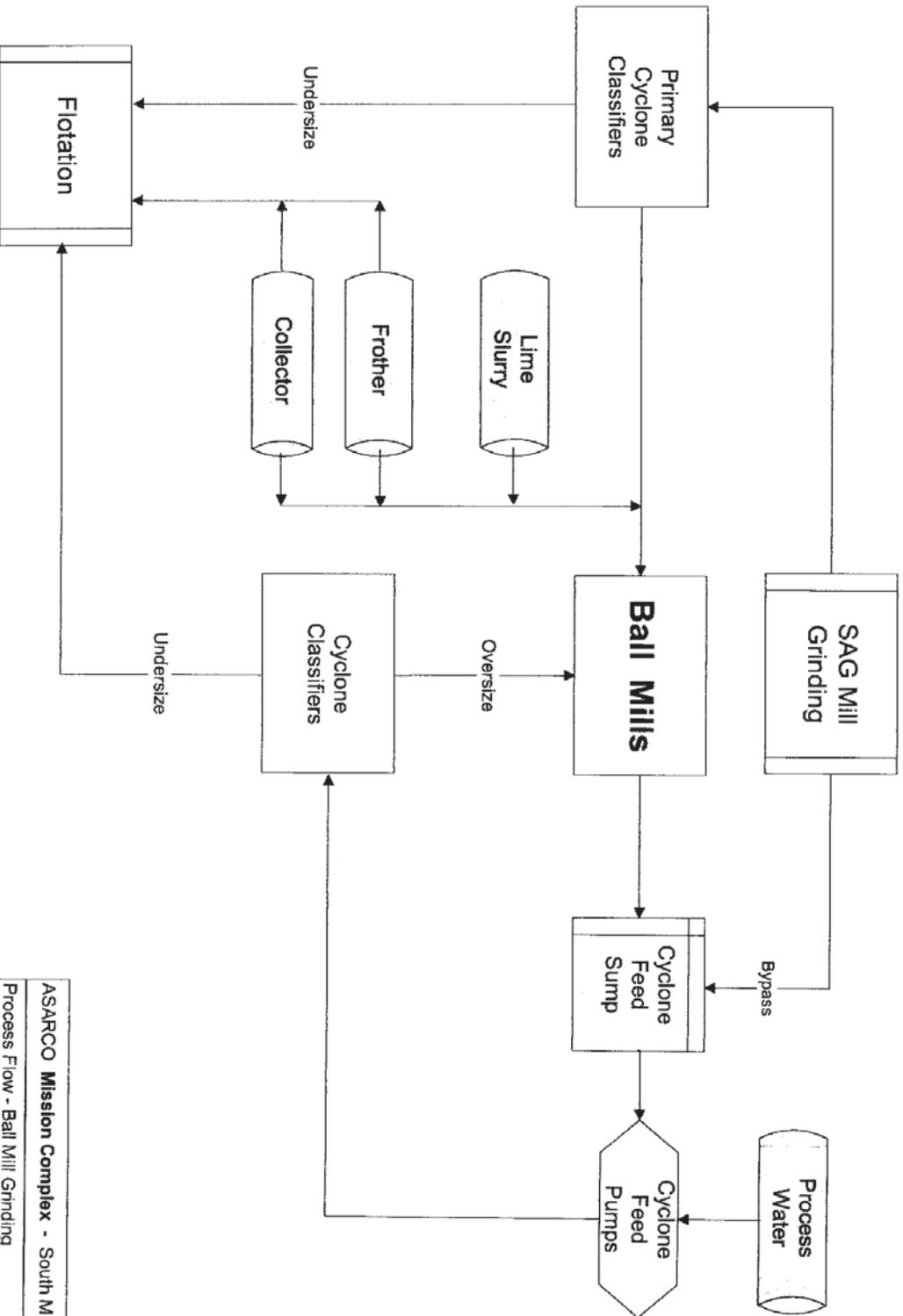
ASARCO Mission Complex
 Process Flow - Mission Concentrate Dewater & Handling
 Qualtrax ID# 8523 Revision 7
 Drawn By: GS, WFL Date: 1/30/07

Mission Complex South Mill - Crushing & SAG Grinding



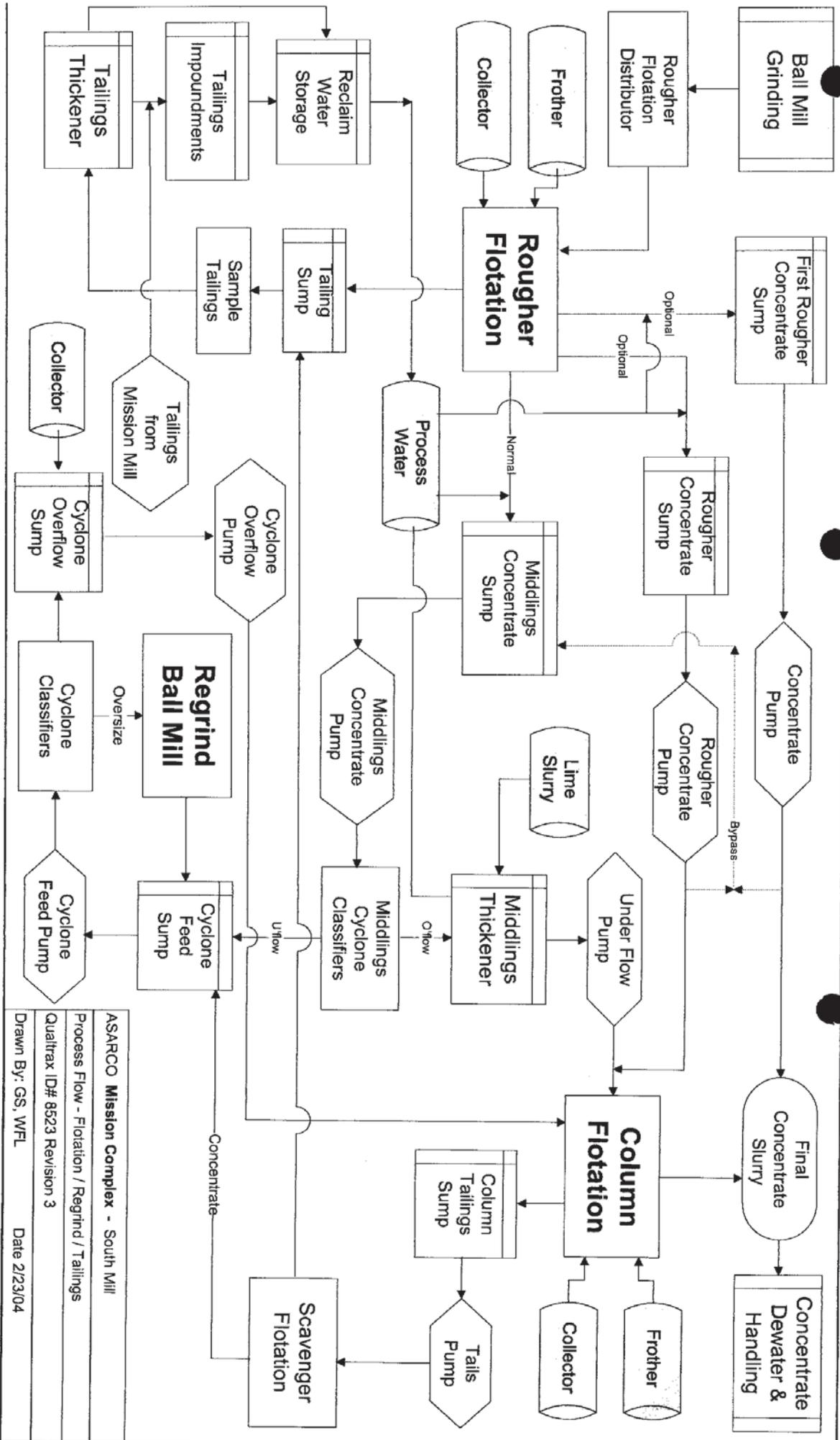
ASARCO Mission Complex - South Mill
 Process Flow - Crushing / SAG Mill Grinding
 Qualtrax ID# 8523 Revision 3
 Drawn By: GS, WFL
 Date: 2/23/04

Mission Complex South Mill - Ball Mill Grinding



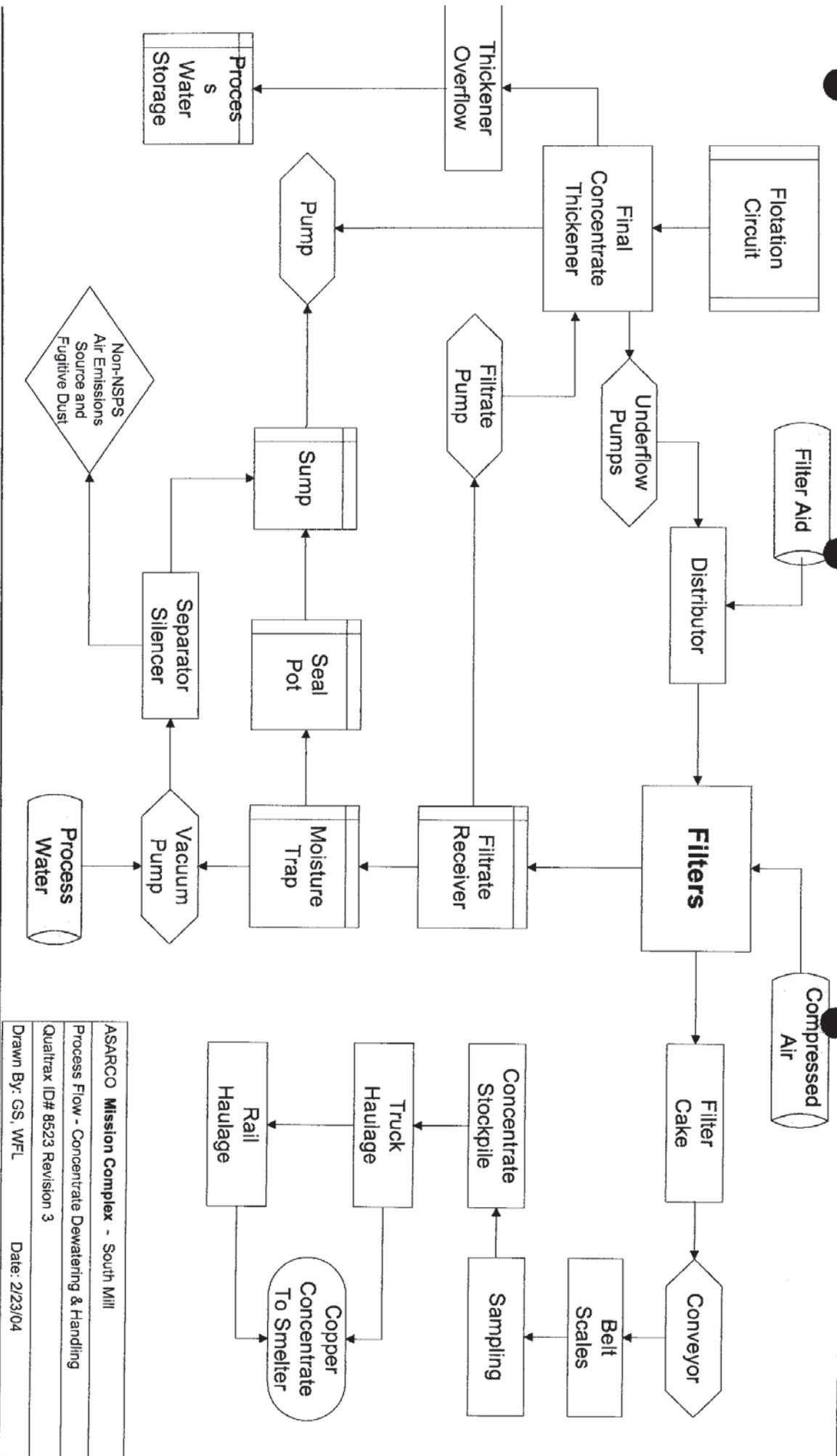
ASARCO Mission Complex - South Mill
 Process Flow - Ball Mill Grinding
 Qualtrax ID# 8523 Revision 3
 Drawn By: GS, WFL Date: 2/23/04

Mission Complex South Mill - Flotation / Tailings



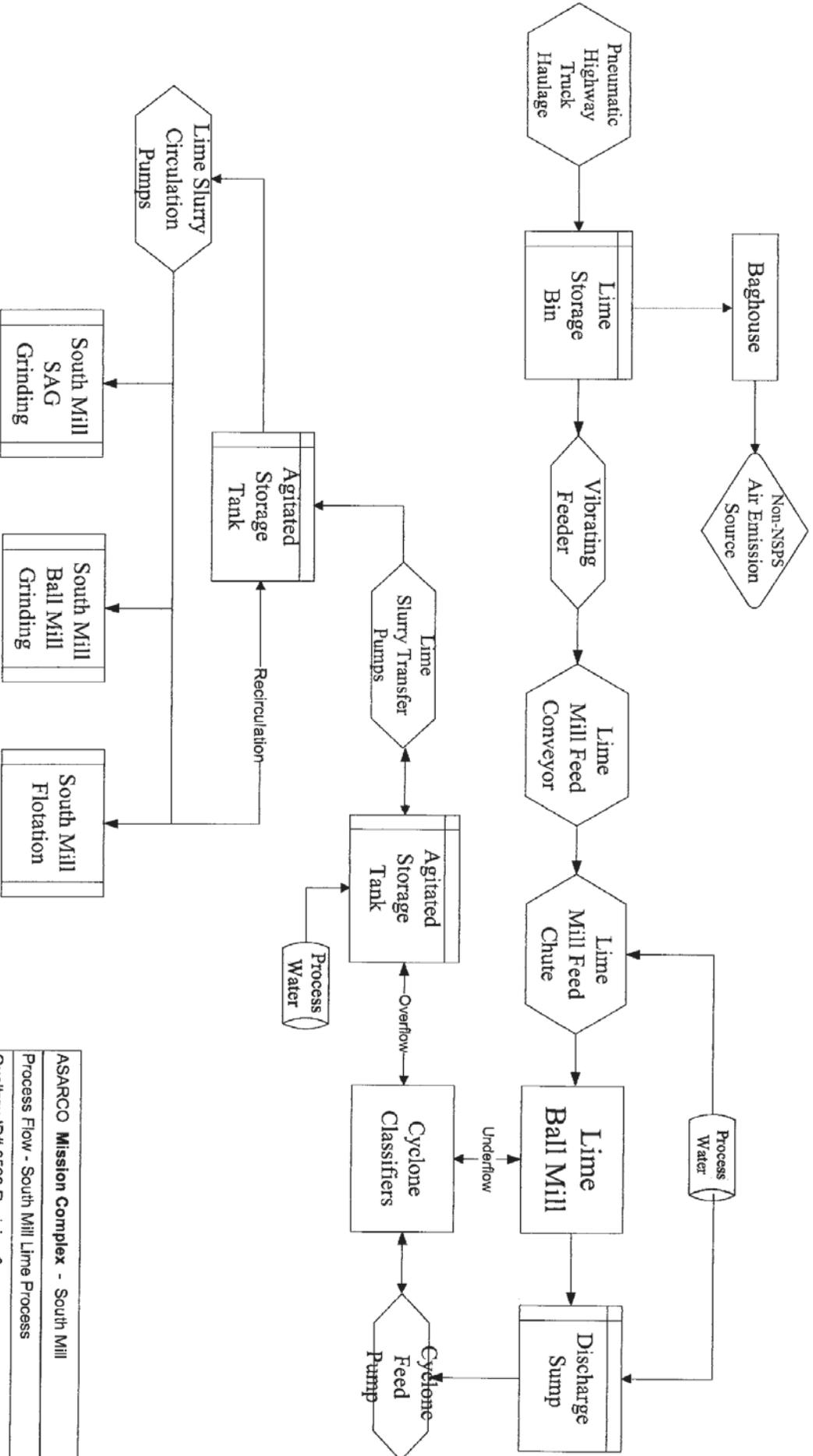
ASARCO Mission Complex - South Mill
 Process Flow - Flotation / Regrind / Tailings
 Quatrac ID# 8523 Revision 3
 Drawn By: GS, WFL
 Date 2/23/04

Mission Complex South Mill - Concentrate Dewatering & Handling



ASARCO Mission Complex - South Mill
 Process Flow - Concentrate Dewatering & Handling
 Qualtrax ID# 8523 Revision 3
 Drawn By: GS, WFL Date: 2/23/04

Mission Complex South Mill - Lime Process



ASARCO Mission Complex - South Mill
 Process Flow - South Mill Lime Process
 Qualtrax ID# 6523 Revision 3
 Drawn By: GS, WFL Date: 2/23/04

6. *A material balance for all processes (optional).*

Not Applicable

7. *Emissions related information:*

Attachment 2 contains all emissions related information for Asarco Mission Complex including the Emission Sources Form.

Emission Sources

Regulated Air Pollutant Data				Emission Point Discharge Parameters										
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System) ¹		Stack Sources				Non-Point Sources		
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struct. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)	
OFMA-1	Drilling	PM-10	0.8	3.5	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable	
			PM	2.1										9.2
OFMA-2	Blasting	PM-10	179	784	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable	
			PM	430										1884
			CO	63										276
			NO _x	16										70
		SO ₂	1.9	8.2										
CFMA-1	Comb. Fugitives Generator 23-001	PM-10	3.1E-2	0.1	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable	
			CO	9.5E-2										0.4
			NO _x	0.4										1.9
			SO _x	2.9E-2										0.1
CFMA-2	Comb. Fugitives Generator 23-002	PM-10	1.1E0	4.8	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable	
			CO	3.4										14.7
			NO _x	15.6										68.2
			SO _x	1.0E0										4.5

Key for Emission Point Numbers

- | | | | | | |
|----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| HF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters											
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System)		Stack Sources				Non-Point Sources			
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)		
CFMA-3	Comb. Fugitives Generator 23-003	PM-10	1.7	7.3	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		CO	5.0	22.0											
		NO _x	53.4	102.3											
		SO _x	1.5	6.8											
VFMA-1	Haulage	PM-10	170	745	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
VFMA-2	Dozing	PM	473	2070	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		PM-10	13	55											
VFMA-3	Grading	PM	72	315	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		PM-10	0.0	0.1											
VFMA-4	Rubber Tire Rigs	PM	0.1	0.3	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		PM-10	10	43											
VFMA-5	Land Clearing	PM	27	118	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		PM-10	0.3	1.2											
VFMA-6	Staff Vehicles	PM	0.7	3.0	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		PM-10	1.3	5.6											
HFMA-1	Unloading Overburden	PM	3.5	16	763,000	361,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
		PM-10	8.8	39											
		PM	23	102											

Key for Emission Point Numbers

- | | | | | | |
|----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| HF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters										
Emission Point		Chemical Composition of Total Stream	Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System) ¹			Stack Sources					Non-Point Sources	
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)	
TFMA-1	Above Ground Tank--Diesel	VOCs	2.0E-2	0.1	769,450	363,520	N/A	N/A	N/A	N/A	N/A	40	40	
TFMA-2	Under Ground Tank--Gasoline	VOCs	0.2	1.1	767,800	363,300	N/A	N/A	N/A	N/A	N/A	35	10	
HFOPM-1	Unloading Ore	PM-10	14	60	767,930	362,550	N/A	N/A	N/A	N/A	N/A	69	25	
			28	120										
SSOPM-1	Wet Scrubber Primary Crushing	PM-10	5.8	26	767,910	362,642	N/A	N/A	4	55	82.7	N/A	N/A	
			9.1	40										
HFOPM-2	Fugitive Transfer Coarse Ore Storage	PM-10	14	60	768,600	362,950	N/A	N/A	N/A	N/A	N/A	Variable	Variable	
			28	120										
WFOPM-1	Wind Erosion Coarse Ore Storage	PM-10	1.1	4.9	768,600	362,950	N/A	N/A	N/A	N/A	N/A	75,000 ft ²	N/A	
			3.0	13										
SSOPM-2	Wet Scrubber Trans. to Secondary	PM-10	0.7	3.1	768,455	363,099	34	N/A	1.2 x	63	93.5	N/A	N/A	
			1.1	4.9										
SSOPM-3	Trans. to Tertiary	PM-10	9.4	41	768,044	363,153	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			19	82										
SSOPM-4	Wet Scrubber Secnd. And Tertiary	PM-10	4.6	20	768,370	363,262	61	N/A	4	59	76	N/A	N/A	
			7.2	32										

Key for Emission Point Numbers

- | | | | | | |
|----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| HF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters									
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System)		Stack Sources				Non-Point Sources	
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)
SSOPM-5	Wet Scrubber	PM-10	4.6	20	768,348	363,249	61	N/A	4	59	76	N/A	N/A
	Secd. And Tertiary	PM	7.2	32									
SSOPM-6	Wet Scrubber	PM-10	4.6	20	768,375	363,276	61	N/A	4	59	76	N/A	N/A
	Secd. And Tertiary	PM	7.2	32									
SSOPM-7	Wet Scrubber	PM-10	4.6	20	768,354	363,264	61	N/A	4	59	76	N/A	N/A
	Secd. And Tertiary	PM	7.2	32									
SSOPM-8	Dust Collector	PM-10	0.4	1.5	768,125	363,816	86 ^{iv}	N/A	1.2 x	33	86	N/A	N/A
	Trans. to F. Ore Bin	PM	0.6	2.4									
SSOPM-9	Dust Collector	PM-10	0.4	1.5	768,101	363,885	86 ^{iv}	N/A	1.2 x	33	86	N/A	N/A
	Trans. to F. Ore Bin	PM	0.6	2.4									
SSOPM-10	Dust Collector	PM-10	0.4	1.5	768,045	363,963	86 ^{iv}	N/A	1.2 x	33	86	N/A	N/A
	Trans. to F. Ore Bin	PM	0.6	2.4									
SSOPM-11	Dust Collector	PM-10	0.4	1.5	768,015	364,060	86 ^{iv}	N/A	1.2 x	33	86	N/A	N/A
	Trans. to F. Ore Bin	PM	0.6	2.4									
SSOPM-12	Dust Collector	PM-10	0.4	1.5	767,989	364,130	86 ^{iv}	N/A	1.2 x	33	86	N/A	N/A
	Trans. to F. Ore Bin	PM	0.6	2.4									
SSOPM-13	Dust Collector	PM-10	0.4	1.5	767,920	364,167	86 ^{iv}	N/A	1.2 x	33	86	N/A	N/A
	Trans. to F. Ore Bin	PM	0.6	2.4									

Key for Emission Point Numbers

- | | | | | | |
|----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| HF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters											
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System)		Stack Sources				Non-Point Sources			
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)		
SSOPM-14	Wet Scrubber	PM-10	2.0	8.6	768,088	363,863	45	N/A	2.5	57	77	N/A	N/A		
	Trans. to R.M. Feed	PM	3.1	14											
SSOPM-15	Wet Scrubber	PM-10	2.0	8.6	768,007	363,984	45	N/A	2.5	57	77	N/A	N/A		
	Trans. to R.M. Feed	PM	3.1	14											
SSOPM-16	Wet Scrubber	PM-10	2.0	8.6	767,914	364,178	45	N/A	2.5	57	77	N/A	N/A		
	Trans. to R.M. Feed	PM	3.1	14											
HFOPM-3	Conc. Loading Area	PM-10	4.7	20	784,924	364,312	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
	East	PM	9.3	41											
HFOPM-4	Conc. Loading Area	PM-10	0.5	2.3	767,950	364,000	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
	North	PM	1.0	4.5											
WFOPM-2	Wind Erosion	PM-10	1.3E-3	5.7E-3	767,950	364,000	N/A	N/A	N/A	N/A	N/A	208	124		
	Conc. Stor.—North	PM	3.4E-3	1.5E-2											
HFOPM-5	Unloading	PM-10	2.7	12	767,880	364,075	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
	Lime	PM	7.2	31											
SSOPM-17	Dust Collector	PM-10	0.5	2.4	767,880	364,075	46	10	1.3 x	36	85	N/A	N/A		
	Lime Handling	PM	1.4	6.2											
SSOPM-18	Lime Transfer	PM-10	2.7	12	767,880	364,075	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	Feeder to Conveyor	PM	7.1	31											

Key for Emission Point Numbers

- | | | | | | |
|----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| HF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters											
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System) ¹		Stack Sources				Non-Point Sources			
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)		
HFOPN-1	Unloading	PM-10	3.8	16	766,980	364,310	N/A	N/A	N/A	N/A	N/A	33	30		
	Ore	PM	7.5	33											
SSOPN-1	Wet Scrubber	PM-10	5.9	26	766,926	364,184	64	N/A	4	54	76	N/A	N/A		
	Pri., Sec., and Ter.	PM	9.3	41											
SSOPN-2	Wet Scrubber	PM-10	5.9	26	766,939	364,163	64	N/A	4	54	76	N/A	N/A		
	Pri., Sec., and Ter.	PM	9.3	41											
SSOPN-3	Wet Scrubber	PM-10	5.9	26	766,951	364,142	64	N/A	4	54	76	N/A	N/A		
	Pri., Sec., and Ter.	PM	9.3	41											
HFOPN-2	Fugitive Transfer	PM-10	3.8	16	767,225	364,020	N/A	N/A	N/A	N/A	N/A	Variable	Variable		
	Coarse Ore Storage	PM	7.5	33											
WFOPN-1	Wind Erosion	PM-10	0.3	1.3	767,225	364,020	N/A	N/A	N/A	N/A	N/A	40,000 ft ² ^{vii}	N/A		
	Coarse Ore Storage	PM	0.8	3.5											
SSOPN-4	Baghouse	PM-10	0.4	1.6	767,144	364,110	20	N/A	3.5	25	108	N/A	N/A		
	Trans. to Secondary	PM	0.8	3.3											
SSOPN-5	Trans. to Tertiary	PM-10	2.6	11	767,050	364,109	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
		PM	5.1	22											

Key for Emission Point Numbers

- | | | | | | |
|-----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| IIF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters									
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System) ¹		Stack Sources				Non-Point Sources	
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)
SSOPN-6	Baghouse	PM-10	0.6	2.8	767,889	364,222	86	N/A	1.2 x 1.3 ^{viii}	68	91	N/A	N/A
	Trans. to F. Ore Bin	PM	1.0	4.4									
SSOPN-7	Wet Scrubber	PM-10	2.0	8.6	767,860	364,361	43	N/A	3.5	33	73	N/A	N/A
	Trans. to Ball Mills	PM	3.1	13									
HFOPS-1	Unloading	PM-10	12	53	764,860	356,150	N/A	N/A	N/A	N/A	N/A	39	52
	Ore	PM	24	105									
SSOPS-1	Wet Scrubber	PM-10	5.8	26	764,854	356,198	49	N/A	4.25	55	70	N/A	N/A
	Primary Crushing	PM	9.1	40									
SSOPS-2	Wet Scrubber	PM-10	0.9	3.9	765,040	356,484	30	N/A	2	45	81	N/A	N/A
	Trans. to Stack	PM	1.4	6.2									
HFOPS-2	Fugitive Transfer	PM-10	12	53	765,300	356,540	N/A	N/A	N/A	N/A	N/A	Variable	Variable
	Coarse Ore Storage	PM	24	105									
WFOPS-1	Wind Erosion	PM-10	1.0	4.3	765,300	356,540	N/A	N/A	N/A	N/A	N/A	90,000 ft ^{2ix}	N/A
	Coarse Ore Storage	PM	2.6	11									
SSOPS-3	Wet Scrubber	PM-10	1.2	5.4	765,477	356,571	34	N/A	3.5	34	70	N/A	N/A
	Trans. to SAG Mill	PM	1.9	8.4									

Key for Emission Point Numbers

- | | | | | | |
|----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| HF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| TF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters									
Emission Point		Chemical Composition of Total Stream		Regulated Air Pollutant Emission Rate		Coordinates of Emission Point (AZ Coord. System) ¹		Stack Sources				Non-Point Sources	
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)
SSOPS-4	Wet Scrubber	PM-10	2.2	9.5	765,536	356,373	30	N/A	3	47	61	N/A	N/A
	Secondary Crushing	PM	3.4	1.5									
SSOPS-5	Trans. to SAG Mill	PM-10	0.8	3.5	765,560	356,555	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		PM	2.0	8.8									
HFOPS-3	Conc. Loading Area	PM-10	2.8	12	765,860	356,970	N/A	N/A	N/A	N/A	N/A	Variable	Variable
	South	PM	5.7	25									
WFOPS-2	Wind Erosion	PM-10	7.1E-3	3.1E-2	765,860	356,970	N/A	N/A	N/A	N/A	N/A	160	133
	Conc. Stor.—South	PM	1.9E-2	8.2E-2									
SSOPS-6	Dust Collector	PM-10	3.0E-3	1.5E-2	765,700	356,300	45	8	1.1 x	100	91	N/A	N/A
	Unloading Lime	PM	9.0E-3	3.9E-2					0.96 ^x				
SSOPS-7	Lime Transfer	PM-10	1.2	5.4	765,700	356,300	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Feeder to Conveyor	PM	3.2	14									
WFDA-1	Wind Erosion	PM-10	5.1	22	Note ^{xi}	Note ^{xi}	N/A	N/A	N/A	N/A	N/A	3376 acres ^{xii}	
	Tailings Dam Areas	PM	92	404									
WFDA-2	Wind Erosion	PM-10	8.8	39	Note ^{xi}	Note ^{xi}	N/A	N/A	N/A	N/A	N/A	Variable	Variable
	Ovbrden Dep. Area	PM	23	102									
SSMP-1	Wet Scrubber	PM-10	0.1	0.5	767,600	364,150	58	15	1.4	13	173	N/A	N/A
	By-Prod. Drying	PM	0.2	0.9									

Key for Emission Point Numbers

- | | | | | | |
|-----|---|-----|---|-----|------------------------------|
| CF | Fugitive Sources—Combustion Off-gases | VF | Fugitive Sources—Vehicles on Unpaved Surfaces | OPN | Ore Processing—North Circuit |
| IIF | Fugitive Sources—Materials Handling | WF | Fugitive Sources—Wind Erosion | OPS | Ore Processing—South Circuit |
| OF | Fugitive Sources—Operational | MA | Mine Activities | DA | Deposition Activities |
| SS | Stack Sources—Air Pollution Control Devices | OPM | Ore Processing—Mission Circuit | MP | By-Products Plant |
| IF | Fugitive Sources—Storage Tanks | | | | |

Regulated Air Pollutant Data				Emission Point Discharge Parameters									
Emission Point		Chemical Composition of Total Stream	Regulated Air Pollutant Emission Rate	Coordinates of Emission Point (AZ Coord. System) ⁱ		Stack Sources			Non-Point Sources				
Number	Name	Regulated Air Pollutant Name	lbs/hr	tons/yr	East (ft)	North (ft)	Height Above Ground (ft)	Height Above Struc. (ft)	Dia. (ft)	Vel. (ft/s)	Temp (°F)	Length (ft)	Width (ft)
CFMP-1	Comb. Fugitives Scr. Dryer 353-113	PM-10	3.4E-2	0.1	767,600	364,150	N/A	N/A	N/A	N/A	N/A	Variable	Variable
		CO	0.1	0.3									
		NO ₂	0.3	1.3									
		SO ₂	1.7E-3	7.5E-3									
CFMP-2	Comb. Fugitives Scr. Dryer 353-114	PM-10	3.4E-2	0.1	767,600	364,150	N/A	N/A	N/A	N/A	N/A	Variable	Variable
		CO	0.1	0.3									
		NO ₂	0.3	1.3									
		SO ₂	1.7E-3	7.5E-3									
CFMP-3	Comb. Fugitives Multi-Hearth Dryer	PM-10	2.8E-2	0.1	767,600	364,150	N/A	N/A	N/A	N/A	N/A	Variable	Variable
		CO	0.1	0.2									
		NO ₂	0.2	1.0									
		SO ₂	1.4E-3	6.3E-3									

ⁱ Coordinates at the center of the pit are approximately: 763,000 ft (East), 361,000 ft (North). These are specified for all in-pit emission sources that are not stationary.

ⁱⁱ Storage pile is cone-shaped with a surface area of approximately 75,000 ft². Diameter is approximately 275 ft.

ⁱⁱⁱ Exit configuration is rectangular. Dimensions are 1.2 x 1.6 ft.

^{iv} Horizontal discharge.

Key for Emission Point Numbers

CF	Fugitive Sources—Combustion Off-gases	VF	Fugitive Sources—Vehicles on Unpaved Surfaces	OPN	Ore Processing—North Circuit
HF	Fugitive Sources—Materials Handling	WF	Fugitive Sources—Wind Erosion	OPS	Ore Processing—South Circuit
OF	Fugitive Sources—Operational	MA	Mine Activities	DA	Deposition Activities
SS	Stack Sources—Air Pollution Control Devices	OPM	Ore Processing—Mission Circuit	MP	By-Products Plant
TF	Fugitive Sources—Storage Tanks				

- v Exit configuration is rectangular. Dimensions are 1.2 x 1.4 ft.
- vi Exit configuration is rectangular. Dimensions are 1.3 x 1.2 ft.
- vii Storage pile is cone-shaped with a surface area of approximately 40,000 ft². Diameter is approximately 200 ft.
- viii Exit configuration is rectangular. Dimensions are 1.2 x 1.3 ft.
- ix Storage pile is kidney-shaped with a surface area of approximately 90,000 ft².
- x Exit configuration is rectangular. Dimensions are 1.1 x 0.96 ft.
- xi Coordinates of emission points for WFDA-1 and WFDA-2 are given in Section 7, Attachment 1.
- xii Tailings area includes several separate dams. Total area is approximately 3376 acres.

$PM = 6276.14$
 $PM_{10} = 2420.25$
 $NO_x = 246$
 $SO_2 = 19.62$
 $CO = 313.9$

		Key for Emission Point Numbers			
CF	Fugitive Sources—Combustion Off-gases	VF	Fugitive Sources—Vehicles on Unpaved Surfaces	OPN	Ore Processing—North Circuit
IIF	Fugitive Sources—Materials Handling	WF	Fugitive Sources—Wind Erosion	OPS	Ore Processing—South Circuit
OF	Fugitive Sources—Operational	MA	Mine Activities	DA	Deposition Activities
SS	Stack Sources—Air Pollution Control Devices	OPM	Ore Processing—Mission Circuit	MP	By-Products Plant
TF	Fugitive Sources—Storage Tanks				

8. *Citation and description of all applicable requirements*

Pima County SIP:

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

Pima County Code (PCC) Title 17:

17.12.020	Planning, constructing, or operating without a permit
17.12.035	Affirmative defenses for excess emissions due to malfunctions, startup, and shutdown
17.12.040	Reporting requirements
17.12.045	Test methods and procedures
17.12.050	Performance tests
17.12.080	Permit display or posting
17.12.140	Applicability-Classes of permits
17.12.160	Permit application processing procedures for Class I permits
17.12.170	Public records-Confidentiality
17.12.180	Permit contents for Class I permits
17.12.200	Permit review by the EPA and affected states
17.12.220	Compliance plan-Certification
17.12.230	Facility changes allowed without permit revisions-Class I
17.12.245	Administrative permit amendments
17.12.255	Minor permit revisions
17.12.260	Significant permit revisions
17.12.280	Permit renewal and expiration
17.12.310	Permit shields
17.12.320	Annual emissions inventory questionnaire
17.12.500	General provisions
17.12.510	Fees related to individual permits
17.16.040	Visible emission standards: Standards and applicability (includes NESHAP)
17.16.050	Visibility limiting standard
17.16.060	Fugitive dust producing activities
17.16.100	Particulate materials
17.16.110	Storage piles
17.16.120	Mineral tailings

- 17.16.130 New and existing stationary source performance standards: Applicability
- 17.16.140 Compilation of mass rates and concentrations
- 17.16.230(B, D, & E) Standards of performance for storage vessels for petroleum liquids
- 17.16.360 Standards of performance for nonferrous metals industry sources
- 17.16.490(A)(51) Standards of performance for new stationary sources (NSPS):
incorporating 40 C.F.R. Part 60, Subpart LL
- 17.16.520(1) &(3) Standards of performance for storage vessels for petroleum liquids
- 17.16.530(A)(13) National emissions standards for hazardous air pollutants
(NESHAP): incorporating 40 C.F.R. Part 61, Subpart M
- 17.20.040 Concealment of emissions
- 17.20.060 Applicability of methodology
- 17.20.090 Stack sampling
- 17.24.020 Recordkeeping for compliance determinations
- 17.24.030 Recordkeeping for emission inventories
- 17.24.050 Reporting as a permit requirement
- 17.24.060 Reporting for emission inventories

Code of Federal Regulations, Title 40

40 C.F.R. Part 60, Subpart A, General Provisions. The following sections of the General Provisions apply to Mission Complex's operations: 40 C.F.R. §§ 60.7(a)(1), 60.7(a)(3), 60.7(a)(4), 60.7(a)(6), 60.7(b), 60.7(f), 60.8, 60.11(b)-(d), 60.11(e)(1)-(e)(3), 60.11(e)(6)-(e)(8), 60.11(g), 60.14(a)-(g), 60.15, and 60.19.

40 C.F.R. Part 60, Subpart LL, Standard of Performance for Metallic Mineral Processing Plants.

40 C.F.R. Part 61, Subpart M, National Emission Standards for Asbestos

40 C.F.R. Part 64, Compliance Assurance Monitoring. Attachment 3 contains Asarco's Compliance Assurance Monitoring Plan submittal

40 C.F.R. Part 82, Subpart F, Protection of Stratospheric Ozone: Recycling and Emissions Reduction

9. *Exemptions*

The following activities qualify for exemption from permit requirements:

- A. Landscaping, building maintenance, or janitorial activities (PCC 17.04.340(A)(113)(a), (EPA "White Paper for Streamline Development of Part 70 Permit Applications", 7/10/95))**
1. Landscaping
 - a. Landscaping and site housekeeping equipment
 - b. Fugitive emissions from landscaping activities
 - c. Use of pesticides, fumigants, and herbicides
 - d. Groundskeeping activities and products
 - e. Internal combustion engines used for landscaping purposes
 2. Building Maintenance
 - a. Housekeeping activities and associated products used for cleaning purposes, including collecting spilled and accumulated materials at the source, including operations of fixed vacuum cleaning systems specifically for such purposes
 - b. Air conditioning, cooling, heating, or ventilating equipment not designed to remove air contaminants generated by or released from associated or other equipment
 - c. General office activities, such as paper shredding, copying, photographic activities, and blueprinting.
 - d. Consumer use of paper trimmers/binders
 - e. Rest room facilities and associated cleanup operations, and stacks or vents used to prevent the escape of sewer gases through plumbing traps.
 - f. Smoking rooms and areas.

- g. Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et. seq.) where the product is used at a source in the same manner as normal consumer use.
- h. Vacuum cleaning systems where the system is used exclusively for industrial or commercial purposes.
- i. Laundry activities, except for dry-cleaning and steam boilers

3. Janitorial Activities

B. Diesel and fuel oil storage tanks with capacity of 40,000 gallons or less, PCC § 17.04.340.(A)(113)(c).

- 1. Storage Tanks-Diesel: 3 tanks, 20,000 gallons each, General area.
- 2. Storage Tank-Fuel Oil, 1 tank, 6,000 gallons, Above Ground, Mission Mill Area.
- 3. Storage Tank-Fuel Oil Emulsion, 1 tank, 6,000 gallons, Above Ground, Mission Mill Area.

C. Batch mixers with rated capacity of 5 cubic feet or less 17.04.340.(A)(113)(d).

D. 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. 17.04.340.(A)(113)(f) (EPA "White Paper for Streamline Development of Part 70 Permit Applications", 7/10/95).

Asarco has hand-held or manually operated equipment that meets this exclusion.

E. 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. 17.04.340.(A)(113)(h) (EPA "White Paper for Streamline Development of Part 70 Permit Applications", 7/10/95)

- 1. IC engine driven electrical generators
 - a. Detroit Diesel Power Generator (equip. #23-001)
 - b. Detroit Diesel Power Generator (equip. #23-002)

- c. Detroit Diesel Power Generator (equip. #23-003)
2. IC engine driven compressors, generators, welders, light plants, sump pumps and compactors used at various operating divisions including, but not limited to the Mechanical Department, Electrical Department, Metallurgical Department, Mill Operations Departments, Mine Department, Engineering Department and the Environmental Department.
3. Portable electrical generators that can be moved by hand from one location to another.

F. Lab equipment used exclusively for chemical and physical analyses

PCC § 17.04.340.(A)(113)(i) (EPA "White Paper for Streamline Development of Part 70 Permit Applications", 7/10/95).

1. Analytical and experimental laboratory equipment which is bench scale in nature used for mineral evaluations and research and development including chemical and physical analysis, quality control/quality assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
2. Small pilot scale research and development projects (per A.A.C. R18-2-101.54) which include but are not limited to:
 - a. The testing of water mist/spray controls for dust abatement.
 - b. The testing of roadway surface treatment coating for dust abatement.
 - c. Research involving alternate product forms.
 - d. Geologic and hydrogeologic exploration and drilling activities.
3. The two small wet scrubbers which control the lab fume exhaust from the Metallurgical Laboratory. Impinjet Wet Scrubbers, W.W. Sly Mfg. Co., #JW4994A and JW4995.
4. Routine calibration and maintenance of laboratory equipment or other analytical instruments.
5. Hydraulic and hydrostatic testing equipment
6. Environmental chambers not using hazardous air pollutant (HAP) gasses.

G. Size-Based Exemptions, PCC § 17.04.340.(A)(109)(j).

In Asarco's previous permit application, the Control Officer determined the following activities were insignificant because of their size.

Fuel combustion emission units and direct combustion units that are designed and used for comfort heating purposes or hot water for personal hygiene, are fired by natural gas or propane, and have an aggregated rating under 500,000 Btu per hour:

1. Space heaters: 36 units, 350,000 BTU.
2. Reznor Space Heater: 6 units, 300,000 BTU.
3. National Hot Water Boiler: 1 unit, 435,000 BTU.
4. Hot Water Heater: 1 unit, 365,000 BTU.
5. Space Heaters: 16 units, 200,000 BTU.
6. Hot Water Heater: 1 unit, 250,000 BTU.
7. Hot Water Heater: 1 unit, 20,000 BTU.
8. Hot Water Heater: 3 units, 40,000 BTU.
9. Payne Furnace: 2 units, 125,000 BTU.
10. Hot Water Heater: 2 units, 199,000 BTU.
11. Space Heaters: 4 units, 100,000 BTU.
12. Space Heaters: 4 units, 137,000 BTU.
13. Miscellaneous hot water heaters throughout the facility.

H. Storage and Distribution.

Asarco has on-site the following storage tanks that the Control Officer determined were insignificant activities in Asarco's previous permit application.

1. Chemical Storage and Process Holding Tanks Which are not Otherwise Covered under Section 112 of the Clean Air Act.
 - a. Chemical storage tanks and storage areas:

- 1) Ammonium Nitrate Storage Hoppers located at the Mission Mill area.
 - 2) Ammonium Nitrate Storage Hoppers located at the South Mill area.
 - 3) Storage tanks listed on Table 1.0
- b. Process holding tanks listed on Table 1.0
2. Storage of butane, propane, or liquefied petroleum gas less than 100 gallon.
3. Petroleum product storage tanks containing the following substances:
 - a. Lubricating oil and Transformer oil:
 - i) Bulk Oil Tank, 3 tanks, 10,000 gallons each, Above Ground Tanks, Lube Center area.
 - 2) Bulk Oil Tank, 1 tank, 1,000 gallons, Above Ground Multi-purpose tank, Underground mine area.
 - 3) Bulk Oil Tank, 1 tank, 500 gallons, Above Ground Multi-purpose tank, Underground mine area.
 - b. Used oil:
 - 1) Used Oil Tank, 4 tanks, 5,000 gallons each, Above Ground Tanks, South Mill, Truck Shop, Mission Mill areas.
 - 2) Used Oil Tank, 1 tank, 10,000 gallons, Lube Center area.
 - 3) Used Oil Tank, 1 tank, 1,500 gallons, Above Ground Multi-purpose tank, Underground mine area.
4. Piping and storage systems for natural gas, propane, and liquefied petroleum gas.
5. Piping of fuel oils, used oil and transformer oil

TABLE 1.0
 Chemical Storage and Process Holding Tanks
 Asarco Mission Complex

<u>Tank</u> <u>(gal.)</u>	<u>Date</u>	<u>Chemical</u>	<u>Capacity</u>
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
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
<u>Tripper Deck</u>			
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
<u>Mission Concentrator Reagent Bldg.</u>			
1.	1961	MIBC	1,000
2.	1961	MIBC	500
3.	1961	MIBC	500
4.	1961	Pine Oil	1,300
5.	1961	Aeroflo-Xanthate	3,500
6.	1961	Cytec 4037	3,500
<u>South Mill Reagent Bldg.</u>			
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
<u>Blasting</u>			
1.	1963	(2)Ammonium Nitrate(North)	70 tons each
2.	1972	(2)Ammonium Nitrate(South)	55 tons each

6. Storage and handling of drums or other transportable containers where the containers are sealed during storage, and covered during loading and unloading (includes containers of RCRA waste and used oil)
 - a. Mission Complex drum staging and identification area. Varying quantities of drums containing mainly Non-Hazardous wastes with minor amounts of RCRA Wastes.
7. Storage tanks of any size containing exclusively soaps, detergents, waxes, greases aqueous salt solutions, aqueous acid solutions, or aqueous caustic solutions
 - a. Liquid Soap storage tanks located at the wash pad area.
 - b. Grease tanks located at the Lube Center
 - c. Solvent storage (dispensing equipment) with capacity of 10,000 gallons or less:
 - 1) Storage Tank- 140 Flash Solvent; Above Ground Tank, 2,500 gallons, Lube Center area.
 - 2) Solvent Degreasing Units (140 Flash Solvent cleaning tanks used in various work areas.); 30-60 gallons each.
8. Waste oil collection and recycling

I. Water and Wastewater Treatment (excluding remediation projects and sewage treatment plants subject to 40 CFR 60 Subpart O)

In Asarco's previous permit application, the Control Officer determined the following activities were insignificant because of their size.

1. Water treatment or storage or cooling systems for process liquids and gases containing no chromium water treatment compounds.
2. Chemical storage associated with water and wastewater treatment where the water is treated for consumption and/or use within the permitted facility.
3. The collection, transmission, liquid treatment, and solids treatment processes at domestic type wastewater and sewage treatment works, or treatment facilities, including septic tank systems, which treat only domestic type wastewater and sewage.

4. Demineralized water tanks and demineralizer vents (EPA "White Paper for Streamline Development of Part 70 Permit Applications.", 7/10/95)
5. Process water filtration systems and demineralizers (EPA "White Paper for Streamline Development of Part 70 Permit Applications.", 7/10/95)

J. Burning Activities

In Asarco's previous permit application, the Control Officer determined the following activities were insignificant because of their size.

1. Firefighting activities and training conducted at the source in preparation for fighting fires (All reporting and permitting requirements that apply to such operations must be followed)
2. Open burning activities (All reporting and permitting requirements that apply to such operations must be followed)
3. Flares used to indicate danger (emergency road flares)

K. Roadways

In Asarco's previous permit application, the Control Officer determined the following activities were insignificant because of their size.

1. Activities associated with the construction, repair or maintenance of roads or other paved or open areas, including operation of street sweepers, vacuum trucks, spray trucks and other vehicles related to the control of fugitive emissions of such roads or other areas.
2. Unpaved public and private roadways, except for haul roads located within a stationary source site boundary.
3. Road and lot paving operations at commercial and industrial facilities.
4. Street and parking lot striping.
5. Fugitive dust emissions from the operation of a passenger automobile, station wagon, pickup truck, or van at a stationary source.

L. General Maintenance

1. General cleanup and maintenance operations which include but are not limited to:

- a. Shoveling to and from belt conveyors and drop boxes.
 - b. Air lance operations.
 - c. Small equipment operations such as bobcats, loaders, backhoes, and other small earth moving activities used as part of facility cleanup and material haulage.
 - d. Ore, rock, tailing and concentrate reclamation practices.
 - e. Demolition, renovation, and salvage operations.
 - f. Waste concrete handling.
 - g. RR Track maintenance
 - h. Potable waterfield maintenance
 - i. Drilling and well development
 - j. Salvage Operations
 - k. Cleanup of ditches
 - l. Stormwater drainage control
 - m. Cleanout of water collection sump
 - n. Cleanup of railcars and clogged chutes
 - o. Manual cleanup around conveyor belts and chute
2. Repair or maintenance shop activities not related to the source's primary business activity.

M. Miscellaneous EPA "White Paper for Streamline Development of Part 70 Permit Applications.", 7/10/95

It is difficult to estimate emissions from these miscellaneous activities; to our knowledge, there are no AP-42 emission factors for most of these activities. Based on the size of the equipment and the infrequency of its use, it is our engineering judgment that any emissions from these activities are minimal.

1. Facilities used for preparing food or beverages primarily for consumption at the source.
2. Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing.
3. Construction and disturbance of surface areas for purposes of land development (water trucks will be used for dust suppression measures as necessary to comply with PDEQ regulations).
4. Activities at a source associated with the maintenance, repair or dismantlement of an emission unit or other equipment installed at the source, including preparation for maintenance, repair or dismantlement and preparation for subsequent startup, including preparation of a shutdown vessel for entry, replacement of insulation, welding and cutting, and purging of a vessel prior to startup; also includes maintenance, repair or dismantlement of buildings, utility lines, pipelines, wells, excavations, earthworks and other structures that do not constitute an emission unit.
5. Containers, reservoirs, or tanks used exclusively in dipping operations to coat objects with oils, waxes or greases.
6. Activities connected with industrial hygiene services.
7. Individual points of emissions or activities as follows:
 - a. Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions.
 - b. Individual features of an emission unit, such as each burner and sootblower in a boiler.
 - c. Individual equipment that is transportable or activities within a facility established for testing for purposes of research or certification.
 - d. Individual flanges, valves, pump seals, pressure relief valves and other individual components that have the potential for leaks.
8. Brazing, soldering, or welding operations and associated venting hoods.
9. Battery recharging areas and batteries
10. Aerosol can usage

11. Plastic pipe or liner welding
12. Acetylene, butane and propane torches.
13. Architectural painting and associated surface preparation for maintenance purposes at industrial or commercial facilities.
14. Steam vents, condenser vents and boiler blowdown
15. Equipment used exclusively for steam cleaning
16. Blast-cleaning equipment using a suspension of abrasive in water or air and any exhaust system or collector serving them exclusively.
17. Surface impoundments, such as ash ponds, cooling ponds, evaporation ponds, settling ponds, and storm water ponds.
 - a. Various concentrate, middling and tailing thickeners located throughout the property.
 - b. Reclaim water ponds and reservoirs
 - c. Stormwater catchment basins
18. Pump/motor oil reservoirs, such as gear box lubrication
19. Transformer vents
20. Lubricating system reservoirs
21. Hydraulic system reservoirs
22. Adhesive use which is not related to production
23. Caulking operations which are not part of a production process.
24. Electric Motors
25. Cathodic protection systems
26. High Voltage induced corona
27. Production of hot/chilled water for on-site use not related to any industrial process

28. Safety devices, such as fire extinguishers, if associated with a permitted emission source, but not including sources or continuous emissions.
29. CFC recovery equipment
30. Soil gas sampling
31. Filter draining
32. General vehicle maintenance and servicing activities at the source.
33. Circuit Breakers
34. Station transformers
35. Gas vent valve (1)
 - (1) A gas vent valve is simply an atmospheric vent, necessary as a safety precaution, anytime that maintenance is performed on a natural gas line.
36. Storage cabinets for flammable materials
37. Fugitive emissions from landfill operations.
38. Concentrate processing, thickener, filters and associated equipment (this is a wet process).
39. Welding, sandblasting, steam cleaning, painting and air compressor venting for line cleanup and startup protection. These activities involve the use of small, hand-held or manually operated equipment that is used only intermittently.
40. There are numerous mobile welders located throughout the property in the various maintenance shops and other welders utilized for field repair.
41. Welding fumes
42. Electric or steam-heated drying ovens and autoclaves, but not emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.

Additional Exemptions

Exemption from 17.16.160 & .165

Asarco believes that its moly plant dryers (equipment nos. 353-113 and 353-114) are exempt from the requirements of PCC § 17.16.160 and 17.16.165 regarding fossil-fuel fired equipment because they are covered by the more specific provisions of PCC § 17.16.360 (non-ferrous minerals processing).

Non-Applicable Requirements. Pursuant to 17.12.310, Asarco requests that the Department list the requirements set forth in Attachment 4 (Table of Requirements That Are Not Applicable) as not applicable to Mission Complex and as covered by a Class 1 permit shield.

10. Information to the extent it is needed to determine or regulate emissions

The following information to the extent it is needed to determine or regulate emissions:

- a. **Maximum annual process rate for each piece of equipment which generates air emissions.**

The maximum annual process rates can be found in Section 11.

- b. **Maximum annual process rate for the whole plant.**

The maximum annual process rate (365 days) for this operation is approximately 39,420,000 tons of copper sulfide ore, depending on ore hardness.

- c. **Maximum rated hourly process rate for each piece of equipment which generates air emissions.**

The maximum rated hourly process rates can be found in Section 11.

- d. **Maximum rated hourly rate for the whole plant.**

The maximum rated hourly process rate for the whole plant is 4,500 tons of copper sulfide ore.

- e. **Fuel burning equipment**

Multiple hearth dryer -by-products plant (equip. 353-69), 2,500,000 BTU
 Screw dryer - by-products plant (equip. 353-113), 3,000,000 BTU
 Screw dryer - by-products plant (equip. 353-114), 3,000,000 BTU

- f. **A description of all raw materials used and the maximum annual and daily, monthly, or quarterly quantities of each material used in tons.**

	<u>DAILY</u>	<u>MONTHLY</u> (30 day)	<u>ANNUAL</u> (365 days)
<u>Raw materials = sulfide ore</u>	<u>108,000</u>	<u>3,240,000</u>	<u>39,420,000</u>

- g. **Anticipated Operating Schedules**

- 1. **Percent of annual production by season.**

The percentage annual throughput: Dec-Feb 25% Mar-May 25%
Jun-Aug 25% Sep-Nov 25%

2. Days of the week normally in operation.

The number of days a week in operation is seven (7).

3. Shift hours of the day normally in operation.

The site is operational 24 hours a day, 8760 hours per year.

4. Number of days per year in operation.

The site is operational 365 days per year.

h. Limitations on source operations and any work practice standards affecting emissions.

Source operations are limited only by the maximum allowable emission rates for nonferrous metals industry sources set out in 17.16.360, and 40 C.F.R. Part 60, Subpart LL and by permit limitations of 2,000 tons/hour at the South Mill primary crusher and 200 tons/hour at each of the South Mill Omnicone crushers.

Table of Requirements That Are Not Applicable

Citation	Regulation	Rationale
17.16.070	Fugitive dust emissions standards for motor vehicle operation.	Asarco does not have a vacant lot, an urban or suburban open area, or a dry wash, riverbed or open area subject to this provision.
17.16.080	Vacant lots and open spaces.	Asarco does not have a vacant lot, or open spaces subject to this provision.
17.16.090(A)-(C), (F)	Roads and streets.	Asarco does not have roads and streets subject to these provisions.
17.16.150	Hazardous waste, hazardous waste fuel, used oil, and used oil fuel burning equipment.	Asarco does not burn hazardous waste, hazardous waste fuel, used oil, or used oil.
17.16.160 through 17.16.210	Standards of Performance for emission units.	Asarco does not have any of the emission units regulated by these provisions.
17.16.230(A)	Standards of performance for storage vessels for petroleum liquids having a capacity of forty thousand gallons or more having a vapor pressure of 1.5 pounds per square inch absolute or greater under actual storage conditions.	Asarco does not have any petroleum liquid storage vessels of the minimum capacity storing liquids with a vapor pressure of 1.5 pounds per square inch absolute or greater.
17.16.230(C)	Dock loading of petroleum products.	Asarco does not have a dock loading operation.
17.16.240 through 17.16.350	Standards of Performance for emission units.	Asarco does not have any of the emission units regulated by these provisions.
17.16.370 through 17.16.420	Standards of Performance for emission units.	Asarco does not have any of the emission units regulated by these provisions.
17.16.430	Standards of performance for unclassified sources.	Asarco does not operate any emission unit that is not otherwise subject to standards of performance under Articles IV, VI, or VII of Chapter 17.16.
17.16.450 through	Emissions from New and Existing Portable Sources.	Asarco does not operate any new or existing portable sources subject to

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17.16.480		these provisions.
17.16.490(A)(9) through 17.16.490(A)(50)	Incorporation of federal New Source Performance Standards	Asarco does not operate any emission units regulated by these federal provisions.
17.16.490(A)(52) through 17.16.490(A)(89)	Incorporation of federal New Source Performance Standards	Asarco does not operate any emission units regulated by these federal provisions.
17.16.500 through 17.16.510	Standards of performance for fossil-fuel fired steam generators and incinerators.	Asarco does not operate any fossil-fuel fired steam generators or incinerators.
17.16.520(2)	Standards of performance for storage vessels for petroleum liquid at dock loading facilities.	Asarco does not operate any dock loading facilities.
17.16.530(A)(3) through 17.16.530(A)(12)	Incorporation of federal National Emission Standard for Hazardous Air Pollutants.	Asarco does not operate any emission units regulated by these federal provisions.
17.16.530(A)(14) through 17.16.530(A)(32)	Incorporation of federal National Emission Standard for Hazardous Air Pollutants.	Asarco does not operate any emission units regulated by these federal provisions.
17.16.530(B)	Incorporation of federal National Emission Standard for Hazardous Air Pollutants.	Asarco is not a major source of hazardous air pollutants. Asarco does not operate any emission units governed by federal provisions regulating area sources.
17.16.650 through 17.16.685 and 49 A.R.S. § 49-480.04	County hazardous air pollutant regulations.	Asarco is not a major source of hazardous air pollutants or a minor source of hazardous air pollutants in one of the listed source categories.

11. Description of all Process and Control Equipment

Rev. 3-08

Mission Primary Crushing

1.
 - a. Name -**Primary Crusher (M303-E3)**
 - b. Make -Traylor, 54 inch X 60 inch
 - c. Model -TC
 - d. Serial # -77200
 - e. Date of manufacture - 6/61
 - f. Size/production capacity - 400 HP, 2,290 TPH
 - g. Type- Gyratory, water sprays @ dump pocket

2.
 - a. Name-**Apron Feeders (M303-E4 & E5)**
 - b. Make - Stephens Adamson
 - c. Model -SA Aurora 11945-LA
 - d. Serial # - M-2162-2 (both feeders)
 - e. Date of manufacture - 6/61
 - f. Size/production capacity - 40 HP, 2,290 TPH for 2 feeders
 - g. Type- Pan

3.
 - a. Name - **Wearbelt (M303-E9)**
 - b. Make - Not Applicable
 - c. Model - Not applicable
 - d. Serial # - Not applicable
 - e. Date of manufacture - 6/61
 - f. Size/production capacity -50 HP, 2,290 TPH
 - g. Type- 60 inch, spray bar @ conveyor head

4.
 - a. Name-**Wet Scrubber (303-21)**
 - b. Make-Ducon
 - c. Model-Size 108
 - d. Serial #-Not Available
 - e. Date of manufacture- Prior to August 25, 1982
 - f. Size/production capacity- 125 HP, 41,503 AWCFM
 - g. Type- UW-4

5.
 - a. Name - **Conveyor (M309-E1)**
 - b. Make - not applicable
 - c. Model - Stacker
 - d. Serial # - Not applicable
 - e. Date of manufacture -6/61
 - f. Size/production capacity -900 HP, 2,290 TPH

- g. Type- 60 inch, water spray used at wearbelt conveyor drop point and multiple spray bars at Intermediate Ore Storage drop point. Sprays also at drivehouse.
6.
 - a. Name- **Vibratory Feeders (V305-E1 through E6)**
 - b. Make-Syntron
 - c. Model-F86-D
 - d. Serial #-110324 through 110328 & 358093
 - e. Date of manufacture-6/61
 - f. Size/production capacity- 13HP, 382 TPH
 - g. Type- Vibratory. Water sprays located at each feeder.
 7.
 - a. Name-**Wet Scrubber (305-07)**
 - b. Make-American Air Filter Roto Clone
 - c. Model- Size 12, Design 2-D
 - d. Serial #-N800041
 - e. Date of manufacture- Prior to August 25, 1982
 - f. Size/production capacity-40 HP, 5,947 AWC FM
 - g. Type- N
 8.
 - a. Name-**Conveyor to Secondary Crusher (M309-E2 & M309-E6)**
 - b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of manufacture-8/93 (modified)
 - f. Size/production capacity-200HP, 1,145 TPH
 - g. Type-42 inch

Mission Secondary/Tertiary Crushing

9.
 - a. Name- **Double Deck Screens (M307-E1 & E2)**
 - b. Make-Svedala
 - c. Model-Double Deck X H Low Head
 - d. Serial #-Not Available yet
 - e. Date of manufacture-1998
 - f. Size/production capacity-75 HP, 1,300 TPH
 - g. Type-10 foot X 20 foot
10.
 - a. Name-**Secondary Crusher (307-E3 & 307-E4)**
 - b. Make-Nordberg
 - c. Model-MP800
 - d. Serial #- MP800-110, MP800-111
 - e. Date of manufacture-1998
 - f. Size/production capacity-800 HP, 1,500 TPH
 - g. Type-Standard Crusher, fine crushing

*No such reference in diagram
aka
Standard Crusher?*

642-2 642-2

11.
 - a. Name-**Double Deck Screens (M307-E5 & E6)**
 - b. Make-Svedala
 - c. Model-Double Deck Low Head
 - d. Serial #-Not Available
 - e. Date of manufacture-1998
 - f. Size/production capacity- 40 HP, 800 tons/hour
 - g. Type- 8 foot X 20 foot.
Spray bars located at drop points to conveyor M307-E21

12.
 - a. Name- **Conveyor (M307-E21)**
 - b. Make-Not Applicable
 - c. Model-Single Deck Oversize
 - d. Serial #-Not Applicable
 - e. Date of manufacture-8/93 (modified)
 - f. Size/production capacity-200 HP, 1,968 TPH
 - g. Type-42 inch, Water spray heads @ transfer tower

13.
 - a. Name-**Wet Scrubber (307-108)**
 - b. Make-Ducon
 - c. Model-Size 54
 - d. Serial #-Not Applicable
 - e. Date of manufacture-1973
 - f. Size/production capacity-30 HP, 8,000 CFM
 - g. Type- UW-4

14.
 - a. Name-**Conveyor (M307-E23)**
 - b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of manufacture-8/93 (modified)
 - f. Size/production capacity-250 HP, 1,968 TPH
 - g. Type- 42 inch, Water Spray @ drop point from M307-E21

15.
 - a. Name-**Surge Bin (307-E8, 307-E9, 307-E51)**
 - b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of manufacture-Prior to August 25, 1982
 - f. Size/production capacity-500 live tons
 - g. Type-Tertiary feed

16.
 - a. Name-**Vibratory Feeders (V307-E10,E11,E52)**
 - b. Make-Syntron
 - c. Model-F86-D
 - d. Serial #-11246, 11247, 237667
 - e. Date of manufacture-6/61, 6/61, 2/67

- f. Size/production capacity-13 HP, 656 TPH
 - g. Type-Vibratory
17. a. **Name-Feed Conveyor (M307-E24,E25,E53)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of manufacture-8/93 (modified)
f. Size/production capacity-10 HP, 656 TPH
g. Type 1- Retractable
18. a. **Name- Tertiary Crusher (307-E12, 307-E13, & M307-E54)**
b. Make-Nordberg
c. Model-MP800
d. Serial #- MP800-107, MP800-108, MP800-109
e. Date of manufacture-1998
f. Size/production capacity-800 HP, 656 TPH
g. Type-7 foot, fine crushing
19. a. **Name-Double Deck Screens (M307-E14, E15, E55)**
b. Make-Svedala
c. Model-Double Deck Low Head
d. Serial #-Not Available yet
e. Date of manufacture-1998
f. Size/production capacity-40 HP, 656 TPH
g. Type-8 foot X 20 foot
20. a. **Name-Double Deck Conveyor (M307-E16)**
b. Make- Not Available
c. Model- Double Deck
d. Serial #-Not Applicable
e. Date of manufacture-8/93 (modified)
f. Size/production capacity-75 HP, 2,500 TPH
g. Type-48 inch
21. a. **Name- Wet Scrubber (307-104 through 307-107)**
b. Make-Ducon
c. Model- Size 108
d. Serial #-66-424-A, 66-424-B, 65-135B, Not Available
e. Date of manufacture- Prior to August 25, 1982
f. Size/production capacity-125 HP,28,613 SCFM (1 spare on stand-by)
g. Type-UW-4
22. a. **Name-Feed Conveyor (M307-E13)**
b. Make-Not Applicable
c. Model-Not Applicable

- d. Serial #-Not Available
 - e. Date of Manufacture-8/93 (modified)
 - f. Size/Production Capacity-500 HP, 2,500 TPH
 - g. Type-Tripper Deck. Spray bar @ conveyor tail end.
23. a. **Name-Feed Conveyor (M307-E44)**
b. Make-Not Applicable
c. Model-Not Available
d. Serial #-Not Available
e. Date of Manufacture-1998 Extend
f. Size/Production Capacity-HP (TBD) , 2,500 TPH
g. Type-Fine Ore Bins Conveyor
24. a. **Name-Tripper Car (M311-E45)**
b. Make-Cimetta Engineering
c. Model- Not Applicable
d. Serial #- Not Applicable
e. Date of Manufacture-6/61
f. Size/Production Capacity-5 HP, 2,500 TPH
g. Type- Fabricated by Cimetta Engineering
25. a. **Name-Fine Ore Bins (6) (310-01)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-Approx. 1960
f. Size/Production Capacity- 15,700 tons- live storage capacity
g. Type- Fine ore storage
26. a. **Name-Fine Ore Feeder belts (311-1, 311-24, 311-60, 311-71)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufactured 6/61, 2/67
f. Size/Production Capacity-3 HP,100-130 TPH,(12)Variable Speed
50 Tons/hour (24) Fixed Speed
g. Type- 36 inch, Fixed and Variable speed conveyors
27. a. **Name-Conveyor (M311-E25 through M311-E28, M311-E72, M311-E73)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-6/61, 2/67
f. Size/Production Capacity-3 HP, 350 TPH
g. Type-30 inch

28.
 - a. **Name-Conveyor (M311-E29, M311-E32, M311-E74, M311-E75)**
 - b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-6/61, 2/67
 - f. Size/Production Capacity-5 HP, 350 tons/hour
 - g. Type-Rod Mill Feed

29.
 - a. **Name-Dust Collectors (M311-E37 through M311-E40, M311-E78, M311-E79)**
 - b. Make-Wheelabrator
 - c. Model- 112-D
 - d. Serial #-A111115 through A111119, & A120117
 - e. Date of Manufacture-Approx. 1960
 - f. Size/Production Capacity- 10 HP, 3,412 AWC FM
 - g. Type-Dry

30.
 - a. **Name-Wet Scrubber (311-109 through 311-111)**
 - b. Make-Ducon
 - c. Model-Size 66
 - d. Serial #-C91-1100
 - e. Date of Manufacture-Prior to August 25, 1982
 - f. Size/Production Capacity- 75 HP, 10,283 SCFM
 - g. Type-UW-4

31.
 - a. **Name- Fine Ore Bin (311-126)**
 - b. Make- Fabricated
 - c. Model-Custom built
 - d. Serial #-Not available
 - e. Date of Manufacture- ?/99
 - f. Size/Production Capacity- 5,000 tons
 - g. Type- Steel

32.
 - a. **Name- Belt Feeder (311-121)**
 - b. Make- Fabricated
 - c. Model- Custom built
 - d. Serial #- Not available
 - e. Date of Manufacture- ?/99
 - f. Size/Production Capacity- 15 HP, 7500 tons/hour
 - g. Type- 30 inch belt

33.
 - a. **Name- Belt Feeder (311-122)**
 - b. Make- Fabricated
 - c. Model- Custom built
 - d. Serial #- Not available
 - e. Date of Manufacture-?/99

- f. Size/Production Capacity-15 HP, 750 tons/hour
 - g. Type- 30 inch belt
34. a. Name- **Belt Feeder (311-123)**
 b. Make- Fabricated
 c. Model- Custom built
 d. Serial #- Not available
 e. Date of Manufacture- ?/99
 f. Size/Production Capacity-15 HP, 750 Tons/hour
 g. Type- 30 inch belt
35. a. Name- **Belt Feeder (311-124)**
 b. Make- Fabricated
 c. Model- Custom built
 d. Serial #- Not available
 e. Date of Manufacture- ?/99
 f. Size/Production Capacity- 15 HP, 750 tons/hour
 g. Type- 30 inch belt
36. a. Name- **Wet Scrubber (M309-101)**
 b. Make- American Air Filter Roto Clone
 c. Model- Size 19, Part No. 13455-21
 d. Serial #- K600206
 e. Date of Manufacture- Prior to August 25, 1982
 f. Size/Production Capacity- 25 HP/intermittent use
 g. Type- K1

North Crusher

37. a. Name- **Pan Feeder (361-05)**
 b. Make-NICO (National Iron Company)
 c. Model-FD-7F08
 d. Serial #-Not Available
 e. Date of Manufacture-2/89 (modified)
 f. Size/Production Capacity-60 HP, 625 TPH
 g. Type-72 inch X 58 foot X 3/4 inch, water sprays at dump pocket
38. a. Name-**Conveyor (361-05A)**
 b. Make-Goodyear
 c. Model-Not Applicable
 d. Serial #-Not Applicable
 e. Date of Manufacture-Prior to August 25, 1982
 f. Size/Production Capacity-1 TPH
 g. Type-Dribble
39. a. Name **Crusher (361-02A)**

- b. Make-Allis Chalmers
 - c. Model-Jaw
 - d. Serial #-B-47300
 - e. Date of Manufacture-5/73
 - f. Size/Production Capacity-200 HP,15,000 tons/day
 - g. Type-60 inch X 48 inch
40. a. Name-**Gathering Conveyor (361-07)**
b. Make-Not Available
c. Model-Jaw Undersize
d. Serial #-Not Available
e. Date of Manufacture-5/73
f. Size/Production Capacity-15 HP, 625 TPH
g. Type-42 inch, wear
41. a. Name-**Wet Scrubber (362-5-3, 362-6-3, 362-7-3)**
b. Make-Ducon
c. Model-Size 108
d. Serial #-65-135C, 65-135D, 65-135E
e. Date of Manufacture-Prior to August 25, 1982
f. Size/Production Capacity-125 HP, 28,613 SCFM
g. Type-UW-4
42. a. Name-**Conveyor (361-08)**
b. Make-Not Available
c. Model-Stockpile Feed
d. Serial #-Not Applicable
e. Date of Manufacture-5/73
f. Size/Production Capacity-150 HP, 625 TPH
g. Type-42 inch. Water spray located midway on belt and spray bar located @conveyor head drop point.
43. a. Name-**Conveyor (361-10 & 361-12)**
b. Make-Not Available
c. Model-Variable Feeder
d. Serial #-Not Applicable
e. Date of Manufacture-5/73
f. Size/Production Capacity-25 HP, 312 TPH
g. Type-48 inch
44. a. Name-**Conveyor (361-15)**
b. Make-Not Available
c. Model-Gathering Conveyor
d. Serial #-Not Applicable
e. Date of Manufacture-5/73
f. Size/Production Capacity-15 HP, 625 TPH

- g. Type-36 inch
- 45.
 - a. Name-**Conveyor (361-16)**
 - b. Make-Not Applicable
 - c. Model-Crusher Feed
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-5/73
 - f. Size/Production Capacity-50 HP, 650 TPH
 - g. Type-36 inch. Water spray located midway on belt
- 46.
 - a. Name-**Screen (361-24)**
 - b. Make-Simplicity
 - c. Model-Double Deck
 - d. Serial #-2612-11014-AX-6-100
 - e. Date of Manufacture- 5/73
 - f. Size/Production Capacity- 25 HP, 650 TPH
 - g. Type-6 foot X 12 foot
- 47.
 - a. Name-**Standard Crusher (361-26-1)**
 - b. Make-Symons
 - c. Model-Standard
 - d. Serial #-7726
 - e. Date of Manufacture-5/73
 - f. Size/Production Capacity- 300 HP, 443 TPH
 - g. Type-7 foot
- 48.
 - a. Name-**Gathering Conveyor (361-28)**
 - b. Make-Not Applicable
 - c. Model-Standard Crusher Discharge
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-5/73
 - f. Size/Production Capacity-15HP, 443 TPH
 - g. Type-42 inch. Water spray located @ head end of conveyor.
- 49.
 - a. Name-**Feed Conveyor (361-29)**
 - b. Make-Not Applicable
 - c. Model-Transfer Tower Feed
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-5/73
 - f. Size/Production Capacity-15HP, 443 TPH
 - g. Type-42 inch, water spray bar located near tail end of conveyor.
- 50.
 - a. Name-**Feed Conveyor (361-30)**
 - b. Make-Not Applicable
 - c. Model-Tertiary Head Hopper
 - d. Serial #-Not Applicable

- e. Date of Manufacture-5/73
 - f. Size/Production Capacity- 75 HP, 443TPH
 - g. Type-42 inch, water spray @ drop point from 361-29
51. a. Name-**Head Hopper (361-31)**
b. Make-Not Applicable
c. Model-Not Available
d. Serial #-Not Available
e. Date of Manufacture- Approx. 1973
f. Size/Production Capacity- Loading Rate = 1,000 TPH
g. Type-Screen Feed
52. a. Name-**Conveyor (361-32 & 361-33)**
b. Make-Not Available
c. Model-Feeder Conveyor
d. Serial #-Not Applicable
e. Date of Manufacture-5/73
f. Size/Production Capacity- 7.5 HP, 443 TPH
g. Type-48 inch
53. a. Name-**Screens (2) (361-34 & 361-36)**
b. Make-Simplicity
c. Model-Double Deck
d. Serial #-2616-11014AX-6-101-S
2616-11014AX-6-102-S
e. Date of Manufacture-5/73
f. Size/Production Capacity-30 HP, 443 TPH
g. Type-6 foot X 14 foot
54. a. Name-**Conveyor (361-37)**
b. Make-Not Applicable
c. Model-Shorthead Feed
d. Serial #-Not Applicable
e. Date of Manufacture-5/73
f. Size/Production Capacity- 10 HP,382 TPH
g. Type-30 inch
55. a. Name-**Crusher (361-38-1)**
b. Make-Symons
c. Model-Shorthead
d. Serial #-7756
e. Date of Manufacture-5/73
f. Size/Production Capacity- 300 HP, 382 TPH
g. Type-7 foot
56. a. Name-**Conveyor (361-40)**

- b. Make-Not Applicable
 - c. Model-Double Deck Undersize Gathering
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-5/73
 - f. Size/Production Capacity- 15 HP, 625 TPH
 - g. Type-30 inch
57. a. **Name-Mill Transfer Belt (361-42)**
- b. Make-Not Applicable
 - c. Model-Transfer
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-2/89
 - f. Size/Production Capacity-125 HP, 600 TPH
 - g. Type-36 inch. Water spray located at tail end of belt.
58. a. **Name-Feed Belt (361-47&361-48)**
- b. Make-Not Applicable
 - c. Model-Reversible Fine Ore Bins
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-8/93
 - f. Size/Production Capacity-15 HP, 7,500 TPH (each belt)
 - g. Type-48 inch
59. a. **Name- Fine Ore Bins (2), (310-03)**
- b. Make- Non Applicable
 - c. Model- Non Applicable
 - d. Serial #- Non Applicable
 - e. Date of Manufacture- Approx. 1989
 - f. Size/Production Capacity- 15,700 tons- live storage capacity
 - g. Type- Fine Ore Storage
60. a. **Name-Ball Mill Feeders (311-87 through 311-90)**
- b. Make-Syntron
 - c. Model-F-480
 - d. Serial #-Not Available
 - e. Date of Manufacture-2/89
 - f. Size/Production Capacity- 3.5 HP, 150 TPH
 - g. Type-Vibrating, fine ore bins
61. a. **Name-Feeder belts (311-85, 311-86, 311-91, 311-92)**
- b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-2/89
 - f. Size/Production Capacity-3.5 HP, 150 TPH
 - g. Type-36 inch

62. a. **Name-Gathering Belts (311-93, 311-93A, 311-94)**
 b. Make-Not Applicable
 c. Model-Not Applicable
 d. Serial #-Not Applicable
 e. Date of Manufacture-2/89
 f. Size/Production Capacity-15 HP, 150 TPH
 g. Type-30 inch
63. a. **Name-Feeder belts (311-95, 311-96)**
 b. Make-Not Applicable
 c. Model-Not Applicable
 d. Serial #-Not Applicable
 e. Date of Manufacture-2/89
 f. Size/Production Capacity- 15 HP, 300 TPH
 g. Type-30 inch
64. a. **Name-Dust Collector (311-99)**
 b. Make-Mikro-Pulsaire Baghouse
 c. Model- 1005
 d. Serial #-880498111
 e. Date of Manufacture- Approx. 1972
 f. Size/Production Capacity- 25 HP, AWCFM= 6,312
 g. Type- Fabric Filter, 1005-10-20 "C"
65. a. **Name-Wet Scrubber (311-100)**
 b. Make-Ducon
 c. Model- III, Size 84
 d. Serial #-C72-367
 e. Date of Manufacture-Approx. 1972
 f. Size/Production Capacity- 60 HP, 16,899 SCFM
 g. Type-UW-4

South Crusher

66. a. **Name-Crusher (10-101)**
 b. Make-Allis-Chalmers
 c. Model-Gyratory
 d. Serial #-B-38040
 e. Date of Manufacture-1/72
 f. Size/Production Capacity-500 HP, 2,000 TPH
 g. Type-54 inch X 74 inch, water sprays @ dump pocket
67. a. **Name-Feeder (10-102)**
 b. Make-NICO (National Iron Company)
 c. Model-Apron

- d. Serial #-8497-285
 - e. Date of Manufacture- 1/72
 - f. Size/Production Capacity- 30 HP, 2,000 TPH
 - g. Type-72 inch
68. a. Name-**Wet Scrubber (10-108)**
- b. Make-Ducon
 - c. Model-Size 96
 - d. Serial #-C70-356
 - e. Date of Manufacture-approx. 1970
 - f. Size/Production Capacity- 100 HP,22,801 SCFM
 - g. Type-UW-4
69. a. Name-**Conveyor (10-103)**
- b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-1/72
 - f. Size/Production Capacity- 500 HP, 2,000 TPH
 - g. Type-54 inch
70. a. Name-**Wet Scrubber (10-114)**
- b. Make-Ducon
 - c. Model-Size 42
 - d. Serial #-C-90-1045
 - e. Date of Manufacture-approx. 1970
 - f. Size/Production Capacity- 20 HP, 4,471 SCFM
 - g. Type-UW-4
71. a. Name-**Radial Stacker (10-105)**
- b. Make-Barber Greene
 - c. Model- G.O. 201008
 - d. Serial #- Not Available
 - e. Date of Manufacture-1/72
 - f. Size/Production Capacity- 350 HP, 2,000 TPH
 - g. Type-54 inch X 585 foot. Water spray heads @ head end of belt-discharge to stockpile.
72. a. Name-**Feeders (30-130, 30-131, 30-132, 30-133)**
- b. Make-NICO (National Iron Company)
 - c. Model- FD-4465
 - d. Serial #- FD-4465-293 through FD-4465-296
 - e. Date of Manufacture-1/72
 - f. Size/Production Capacity- 7.5 HP, 500 TPH
 - g. Type-42 inch

73. a. Name-**Conveyor (30-134, 30-136)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture- 6/14/70
f. Size/Production Capacity-150 HP, 1000 TPH each
g. Type-48 inch, SAG Conveyor
74. a. Name-**Wet Scrubber (30-150)**
b. Make-Ducon
c. Model-72
d. Serial #- C70-356
e. Date of Manufacture- 12/11/70
f. Size/Production Capacity- 75 HP, 14,500 CFM
g. Type-UW-4
75. a. Name-**Stockpile Feed Conveyor (20-250)**
b. Make-Not Applicable
c. Model- Not Applicable
d. Serial #- Not Applicable
e. Date of Manufacture-Prior to August 25, 1982
f. Size/Production Capacity- 600 TPH
g. Type-36 inch X 1,035 feet, SAG Recycle
76. a. Name-**Vibrating Feeders (20-252, 20-253, 20-254)**
b. Make- FMC Syntron
c. Model- F-450-B-DT
d. Serial #- 657887, 657889, 657891
e. Date of Manufacture-10/89
f. Size/Production Capacity- 10 HP, 200 TPH-total
g. Type- 42 inch X 60 inch, Vibrating, SAG Recycle
77. a. Name-**Stockpile Reclaim Conveyor (20-251)**
b. Make-Not Applicable
c. Model--Not Applicable
d. Serial #- Not Applicable
e. Date of Manufacture-10/89
f. Size/Production Capacity- 20 HP, 200 TPH
g. Type-36 inch X 350 feet, SAG recycle
78. a. Name-**Surge Bin Feed Conveyor (20-255)**
b. Make-Not Applicable
c. Model- Not Applicable
d. Serial #- Not Applicable
e. Date of Manufacture-10/89
f. Size/Production Capacity- 10 HP, 200 TPH

- g. Type-54 inch X 408 feet, SAG recycle, Water spray head @ tail end
79. a. Name-**Surge Bin (20-257)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-10/89
f. Size/Production Capacity- 200 TPH
g. Type-SAG recycle
80. a. Name-**Belt Feeder bypass (Omnicone) (20-285)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-10/89
f. Size/Production Capacity- 3 HP, 200 TPH
g. Type-SAG recycle
81. a. Name-**Omnicone Belt Feeder (20-258, 20-259)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-10/89
f. Size/Production Capacity- 3 HP, 200 TPH
g. Type-30 inch X 20 feet
82. a. Name-**Omni Cone Crusher (20-262, 20-263)**
b. Make-Rexnord
c. Model- 1560
d. Serial #- 1560 0323 C3017 7087, 1560 0322 C3017 7086
e. Date of Manufacture-10/89
f. Size/Production Capacity-250 HP, 200 TPH
g. Type-5 foot w/ medium bowl
83. a. Name-**Wet Scrubber (20-270)**
b. Make-Ducon
c. Model- IV, Size 66
d. Serial #- C90-1045
e. Date of Manufacture- 8/90
f. Size/Production Capacity- 50 HP, 10,283 SCFM
g. Type-UW-4, SAG recycle
84. a. Name-**Omnicone Discharge Conveyor (20-265)**
b. Make-Not Applicable
c. Model- Not Applicable
d. Serial #-Not Applicable

- e. Date of Manufacture-10/89
 - f. Size/Production Capacity-50 HP, 200 TPH
 - g. Type-36 inch X 500 feet, Water spray heads @ tail end of conveyor, SAG recycle
85. a. Name- **Grizzly Oversize Conveyor (20-244 & 20-245)**
- b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-1/72
 - f. Size/Production Capacity-10 HP, 100 TPH
 - g. Type-36 inch X 422 feet, SAG recycle
86. a. Name-**Recycle Conveyor (20-266 & 20-268)**
- b. Make-Not Applicable
 - c. Model-Not Applicable
 - d. Serial #-Not Applicable
 - e. Date of Manufacture-1/72
 - f. Size/Production Capacity-10 HP, 100 TPH
 - g. Type-36 inch, SAG recycle

Lime Handling

87. a. Name-**Mission Mill Lime Bin Dust Collector (328-E6)**
b. Make- Wheelabrator
c. Model- 112-D
d. Serial #-A111117a
e. Date of Manufacture-approx. 1960
f. Size/Production Capacity-10 HP, 3,400 CFM
g. Type-Baghouse, Dry
88. a. Name- **South Mill Lime Bin Dust Collector (60-502)**
b. Make-Mikro-Pulsaire
c. Model-36S-8-30
d. Serial #-72H2304
e. Date of Manufacture-2/15/73
f. Size/Production Capacity- 25 HP, 3,000 ACFM
g. Type- Baghouse, dry, Pulsed Air
89. a. Name- **Mission Mill Lime Feeder Conveyor (328-E2)**
b. Make- Not Applicable
c. Model- Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture- approx. 1960
f. Size/Production Capacity- Varies. Only runs on 8 hour day, intermittent feed
g. Type-Dry lime handling, 36 inch X 55 foot belt
90. a. Name- **Mission Mill Lime Feed to Bucket Elevator Conveyor (328-E3)**
b. Make-Not Applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-Approx. 1960
f. Size/Production Capacity- Varies. Only runs on 8 hour day, intermittent feed
g. Type-24 inch X 32 foot belt
91. a. Name- **Mission Mill REX Bucket Elevator (328-E9)**
b. Make- Chain Belt Company
c. Model-Not Available
d. Serial #- Not Available
e. Date of Manufacture-Approx. 1960
f. Size/Production Capacity- Varies. Only runs during 8 hour day. Intermittent feed. 0-8 tons/hour.
g. Type- Lime
92. a. Name- **Mission Mill Lime Feed Conveyor (328-E11)**
b. Make- Not Applicable
c. Model-Not Applicable

- d. Serial #-Not Applicable
 - e. Date of Manufacture-Approx. 1960
 - f. Size/Production Capacity- 0-8 Tons/hour. Varies. Intermittent feed
 - g. Type-20 inches X 37 foot belt
93. a. Name- **Mission Mill LimeHopper**
b. Make- Not Applicable
c. Model- Not Applicable
d. Serial #- Not Applicable
e. Date of Manufacture- Approx. 1960
f. Size/Production Capacity- 40 tons
g. Type- Lime
94. a. Name- **Mission Mill Lime Feeder (328-E44)**
b. Make-Syntron
c. Model- C-54490
d. Serial #- 112501
e. Date of Manufacture- Approx. 1960
f. Size/Production Capacity-0-8 Tons/hour. Varies. Intermittent feed
g. Type- F33D1, style 018551
95. a. Name- **Mission Mill Dry Lime Bin**
b. Make-Not Available
c. Model-Not Available
d. Serial #-Not Applicable
e. Date of Manufacture-Approx. 1960
f. Size/Production Capacity- Approx. 250 tons
g. Type-Dry Lime
96. a. Name- **South Mill Lime Bin (60-500)**
b. Make-Not Available
c. Model-Not Available
d. Serial #-Not Applicable
e. Date of Manufacture-Approx. 1972
f. Size/Production Capacity-100 tons
g. Type-Dry lime storage
97. a. Name- **South Mill Lime Belt (60-600)**
b. Make-Not applicable
c. Model-Not Applicable
d. Serial #-Not Applicable
e. Date of Manufacture-Approx. 1972
f. Size/Production Capacity- 0-4 Tons/hour. Varies. Intermittent feed
g. Type- 24 inch, lime transport
98. a. Name- **South Mill Lime Bin Vibratory Feeder (60-601)**

- b. Make-Syntron
- c. Model-V-20
- d. Serial #-12277
- e. Date of Manufacture- Approx. 1972
- f. Size/Production Capacity- 0-4 Tons/hour. Varies. Intermittent feed
- g. Type-Vibra Flow

By-Products Plant

- 99. a. Name- **Screw Dryer (353-113)**
 b. Make- Not Available
 c. Model-Not Available
 d. Serial #-Not Available
 e. Date of Manufacture- Approx. 1978
 f. Size/Production Capacity- 3,000,000 BTU, 2,000 lb./hour
 g. Type-Natural Gas fired.

- 100. a. Name-**Screw Dryer (353-114)**
 b. Make-Not Available
 c. Model-Not Available
 d. Serial #-Not Available
 e. Date of Manufacture-Approx. 1981
 f. Size/Production Capacity-3,000,000 BTU, 2,000 lb./hour
 g. Type-Natural Gas fired, standby dryer for 353-113

- 101. a. Name- **Wet Dust Collector (353-115)**
 b. Make-Ducon
 c. Model-IV-High Efficiency
 d. Serial #- Contract #C80-0706
 e. Date of Manufacture- 1980
 f. Size/Production Capacity-Size 21, 1,600 ACFM
 g. Type-UW-4, Stainless Steel

- 102. a. Name- **Screw Dryer Holding Hopper (353-119)**
 b. Make-Fabricated on site
 c. Model-Not Applicable
 d. Serial #-Not Applicable
 e. Date of Manufacture-Approx. 1978
 f. Size/Production Capacity- 2,000 lbs/hour
 g. Type-Molybdenum concentrate

- 103. a. Name-**Screw Dryer Holding Hopper (353-120)**
 b. Make-Fabricated on site
 c. Model-Not Applicable
 d. Serial #-Not Applicable
 e. Date of Manufacture-Approx. 1981

- f. Size/Production Capacity- 2,000 lbs/hour
 - g. Type-Molybdenum concentrate
104. a. **Name-Multiple Hearth Dryer (353-69)**
 b. Make-Bartlett-Snow-Pacific, inc.
 c. Model- 5 hearth Pacific dryer
 d. Serial #-63227
 e. Date of Manufacture-Approx. 1964
 f. Size/Production Capacity- 3 feet- 6 1/8 inches, 2,500,000 BTU
 g. Type- Molybdenum-Copper concentrate roaster.

Generators

105. a. **Name-Power Generator (23-001)**
 b. Make-Detroit Diesel
 c. Model-149TI-V12
 d. Serial #-Not Available
 e. Date of Manufacture-Not Available
 f. Size/Production Capacity- 350 KW, 500 HP
 g. Type-V-12 diesel, usage = <250 hours/year
106. a. **Name- Power Generator (23-002)**
 b. Make- Detroit Diesel
 c. Model-149TI-V12
 d. Serial #- Not Available
 e. Date of Manufacture- Not Available
 f. Size/Production Capacity-750 KW, 1,100 HP
 g. Type- V-12 diesel, usage = 250 hours/year
107. a. **Name- Power Generator (23-003)**
 b. Make- Detroit Diesel
 c. Model-149TI-V16
 d. Serial #- Not Available
 e. Date of Manufacture- Not Available
 f. Size/Production Capacity- 1,500 KW, 2,200 HP
 g. Type- V-16 diesel, usage = 900 hours/year

Diesel Fuel Storage Tank

108. a. **Name- Fuel Storage Tank**
 b. Make- Brown Tank and Steel
 c. Model- Above Ground (AST)
 d. Serial #-Not Applicable
 e. Date of Manufacture- 1973
 f. Size/Production Capacity- 250,000 gals.

- g. Type- Vertical fixed roof steel tank. 30 ft. high, 38 ft. diameter., cone roof with breather vent. Storage-HS Diesel Fuel 2

Gasoline Storage Tank

- 109.
 - a. Name- **Fuel Storage Tank**
 - b. Make- Owens-Corning
 - c. Model- Underground Storage Tank (UST)
 - d. Serial #-Not Applicable
 - e. Date of Manufacture- 1990
 - f. Size/Production Capacity- 20,000 gals.
 - g. Type- Fiberglass, Interstitial Monitoring (dual walled tank), Red Jacket line leak detector, vapor recovery system, vented to atmosphere, ADEQ Facility #0-000474, Tank #9

12. Stack Information

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Asarco is providing this information to assist PDEQ in its review of the permit application. Asarco does not intend for this information to be included in the permit. Asarco reserves the right to alter material flows and equipment layout as necessary to facilitate production.

1.
 - a. Identification - **303-21**
 - b. Description - **Ducon 108 Wet Scrubber**
 - c. Building Dimensions - Not Applicable
 - d. Exit Gas Temperature = 82.7 °F
 - e. Exit Gas Velocity = 54.7 fps
 - f. Height = 14 feet- 3 inches
 - g. Inside Dimensions = 4 ft

2.
 - a. Identification -**305-07**
 - b. Description -**American Air Filter Roto Clone**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 93.5°F
 - e. Exit Gas Velocity = 62.9 fps
 - f. Height = 9.4 feet
 - g. Inside Dimensions =14 inches X 19 inches

3.
 - a. Identification -**307-104, 307-105, 307-106, 307-107**
 - b. Description - **Ducon 108 Wet Scrubbers (4)**
 - c. Building Dimensions - Not Applicable
 - d. Exit Gas Temperature = 75.7°F
 - e. Exit Gas Velocity =58.6 fps
 - f. Height= 21 feet- 7 inches
 - g. Inside Dimensions = 4 feet

4.
 - a. Identification -**M311-E37A through M311-40A, M311-E78A, & M311-E79A**
 - b. Description -**Wheelabrator Dry Type Dust Collectors (6)**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature= 85.9°F
 - e. Exit Gas Velocity =33.2 fps
 - f. Height =5 feet (horizontal stack)
 - g. Inside Dimensions =14 inches X 17 inches

5.
 - a. Identification -**311-109 through 311-111,**
 - b. Description - **Ducon 66 Wet Scrubbers (3)**
 - c. Building Dimensions - Not Applicable- on Tripper Deck
 - d. Exit Gas Temperature=76.9°F
 - e. Exit Gas Velocity =56.6 fps
 - f. Height =15 feet
 - g. Inside Dimensions = 2 feet- 6 inches

6.
 - a. Identification - **362-5-3, 362-6-3, 362-7-3**
 - b. Description - **Ducon 108 Wet Scrubbers (3)**
 - c. Building Dimensions - Not Applicable
 - d. Exit Gas Temperature = 76.0°F
 - e. Exit Gas Velocity = 54.0 fps
 - f. Height = 14 feet- 3 inches
 - g. Inside Dimensions=4 feet

7.
 - a. Identification - **311-99**
 - b. Description - **Mikro-Pulsaire Dry Type Dust Collector**
 - c. Building Dimensions - Not Applicable- On Tripper Deck
 - d. Exit Gas Temperature = 91°F
 - e. Exit Gas Velocity =67.7 fps
 - f. Height = 7.6 feet
 - g. Inside Dimensions = 14 inches X 16 inches (horizontal stack)

8.
 - a. Identification - **311-101**
 - b. Description -**Ducon 84 Wet Scrubber**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature= 73°F
 - e. Exit Gas Velocity = 32.9 fps
 - f. Height= 15 feet
 - g. Inside Dimensions= 3 ft- 6 inches

9.
 - a. Identification - **10-108**
 - b. Description - **Ducon 96 Wet Scrubber**
 - c. Building Dimensions - Not Applicable
 - d. Exit Gas Temperature = 70°F
 - e. Exit Gas Velocity = 55 fps
 - f. Height = 17 feet - 11.5 inches
 - g. Inside Dimensions = 4 feet- 3 inches

10.
 - a. Identification - **10-114**
 - b. Description - **Ducon 42 Wet Scrubber**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 81°F
 - e. Exit Gas Velocity = 45.1 fps
 - f. Height = 9 feet- 3 inches
 - g. Inside Dimensions = 2 feet

11.
 - a. Identification - **30-150**
 - b. Description - **Ducon 72 Wet Scrubber**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 70°F
 - e. Exit Gas Velocity = 34 fps

- f. Height = 6 feet – 4.5 inches
 - g. Inside Dimensions = 3 feet- 6 inches
- 12.
- a. Identification - **20-270**
 - b. Description -**Ducon 66 Wet Scrubber**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 61°F
 - e. Exit Gas Velocity = 46.6 fps
 - f. Height = 11 feet – 4.5 inches
 - g. Inside Dimensions = 3 feet
- 13.
- a. Identification - **328-E6**
 - b. Description -**Wheelabrator dry dust collector** (lime storage)
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 85°F
 - e. Exit Gas Velocity = 36.3 fps
 - f. Height = 3 feet- 4 inches
 - g. Inside Dimensions = 16 inches X 14 inches
- 14.
- a. Identification - **60-502**
 - b. Description - **Mikro-Pulsaire dry dust collector** (lime storage)
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 91°F
 - e. Exit Gas Velocity = 99.6 fps
 - f. Height = 4 feet- 6 inches
 - g. Inside Dimensions = 13 ¼ inches X 11½ inches
- 15.
- a. Identification - **353-115**
 - b. Description -**Ducon 21-High Efficiency wet scrubber**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 173°F
 - e. Exit Gas Velocity = 13.1 fps
 - f. Height =17.5 feet
 - g. Inside Dimensions = 16½ inches
- 16.
- a. Identification - **M309-101, at take-up pulley on 48” belt conveyer #M307-E13**
 - b. Description -**American Air Filter Roto Clone Scrubber**
 - c. Building Dimensions -Not Applicable
 - d. Exit Gas Temperature = 90 - 95 °F
 - e. Exit Gas Velocity = (unknown) fps
 - f. Height = 3.8 feet
 - g. Inside Dimensions = 19 X 14.5 inches
- 17.
- a. Identification - **307-108**
 - b. Description -**Ducon 54 Wet Scrubber**

- c. Building Dimensions -Not Applicable
- d. Exit Gas Temperature = 60 °F
- e. Exit Gas Velocity = 37.6 fps
- f. Height (stack) = 14 feet
- g. Inside Dimensions = 2.271 feet

14. Air pollution control information

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- a. Description of or reference to any applicable test method for determining compliance with each applicable requirement.
- b. Identification, description and location of air pollution control equipment, including spray nozzles and hoods, and compliance monitoring devices or activities.
- c. The rated operating efficiency of air pollution control equipment.
- d. Data necessary to establish required efficiency for air pollution control equipment (e.g. air to cloth ratio for baghouses, pressure drop for scrubbers, and warranty information)
- e. Evidence that operation of the new or modified pollution control equipment will not violate any ambient air quality standards, or PSD increments.

14e. Asarco is applying for a permit renewal, is not seeking to permit any "new or modified pollution control equipment" and hence this question is not applicable to this permit application.

When available, Asarco presents source testing control efficiency data that has been used in the emissions inventory as a conservative estimate.

1.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** I.D. SSOPM-1, Equip. 303-21
Description: Ducon wet scrubber
Location: Primary Crushing
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 303-21 on 6/2/97 and 7/10/97.
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.
2.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** I.D. HFOPM-2, Water spray located at discharge to Coarse Ore Storage.
Description: Water Sprays
Location: Head end of 60 inch belt conveyor (Equip. M309-E1)
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)

- d. **Data necessary:** Periodic visual monitoring, periodic performance test.
- 3.
- a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** SSOPM-2, (Equip. 305-07)
Description: American Air Filter Roto Clone Wet Scrubber
Location: Coarse Ore Storage Out
Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 305-07 on 6/12/97.
 - d. **Data necessary:**
 - 1. Record liquid flow rate on a weekly basis, \pm 30% from the most recent performance test.
 - 2. Record vacuum (inches of water) on a weekly basis, \pm 30% from most recent performance test.Periodic performance test.
- 4.
- a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** I.D. SSOPM 4, 5, 6, & 7 (Equip. 307-104, 307-105, 307-106, & 307-107)
Description: Ducon Wet Scrubbers
Location: Secondary & Tertiary Crushing
Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 307-04, 307-105, 307-106, 307-107, and 307-108 in December 1999.
 - d. **Data necessary:**
 - 1. Record liquid flow rate on a weekly basis, +/- 30% from most recent performance test.
 - 2. Record vacuum (inches of water) on a weekly basis, +/- 30% from most recent performance test.Periodic performance test.

5.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** SSOPM-3, Water Spray at Transfer Tower from belt M307-E21 to belt M307-E23 (Equip. 307-108)
Description: Process Water Sprays
Location: Conveyors at Transfer Tower
Compliance: Sprays operational, opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.

6.
 - a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** SSOPM-8 & SSOPM-9, (Equip. M311-E37A)
Description: Fine ore drop Wheelabrator baghouse
Location: Belt Conveyor M307-E13 & M307-E44
Compliance: Opacity will be kept at 7% or below.
 - c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on M311-E37 on 6/6/97 and on M311-E38 on 7/21/98.
 - d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.

7.
 - a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** SSOPM-8, 9, 10, 11, 12, & 13 (Equip. M311-E37A through M311-E40A, M311-E78A, M311-E79A)
Description: Fine ore storage Wheelabrator baghouse
Location: Fine ore bins #1-6
Compliance: Opacity will be kept at 7% or below.
 - c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on M311-E37 on 6/6/97, on M311-E38 on 7/21/98, M311-E39 on 7/22/1998, on M311-E40 on 7/23/1998).
 - d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.

8.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** SSOPM-14, 15, & 16 (Equip. 311-109, 311-110, 311-111)
Description: Ducon Wet Scrubbers
Location: Fine Ore Bins 1-6 out, rod mill feed belts.
Compliance: Opacity will be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 311-110 on 6/4/97 and 7/11/97.
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.

9.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** SSOPN-1, 2, & 3 (Equip. 362-5-3, 362-6-3, 362-7-3)

- Description:** Ducon Wet Scrubbers
Location: North Primary, Secondary, and Tertiary Crushing
Compliance: Opacity shall be kept at 20% or below.
- c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 362-5-3 on 6/3/97 and 7/11/97.
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.
10. a. **Test Method:** EPA Reference Method 9
b. **Identification:** HFOPN-2, Water Spray located at discharge to Coarse Ore Storage
Description: Water Sprays
Location: Head end of 42" conveyor (361-08)
Compliance: Opacity shall be kept at 20% or below.
- c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
d. **Data necessary:** Periodic visual monitoring, periodic performance test.
11. a. **Test Method:** EPA Reference Methods 5 and 9
b. **Identification:** SSOPN-6, (Equip. 311-99)
Description: Micropul Baghouse
Location: Fine ore drop, fine ore storage in-fine ore bin
Compliance: Opacity shall be kept at 7% or below.
- c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 311-99 on 9/19/89.
- d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.
12. a. **Test Method:** EPA Reference Methods 5 and 9
b. **Identification:** SSOPN-7 (Equip. 311-101)
Description: Ducon Wet Scrubber
Location: Fine ore storage out, ball mill feed belts, '89 expansion
Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The Asarco Mission Complex monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.
- c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 3110100 on 9/20/89.
- d. **Data necessary:**
1. Record liquid flow rate on a weekly basis, +/- 30% from most recent performance test.

2. Record vacuum (inches of water) on a weekly basis, +/- 30% from most recent performance test.
Periodic performance test.
13.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** SSOPS-1 (Equip. 10-108)
Description: Ducon Wet Scrubber
Location: South Primary Crusher
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 303-21 on 6/2/97 and 7/10/97.
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.
14.
 - a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** SSOPS-2, (Equip. 10-114)
Description: Ducon Wet Scrubber
Location: Transfer point- belt 10-103 to 10-105
Compliance: Opacity will be kept at 7% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 10-114 on 9/10/92.
 - d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.
15.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** HFOPS-2, Water spray located at head of belt 10-105 to wet material dropping onto coarse ore storage.
Description: Water Sprays
Location: Belt 10-105
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.
16.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** SSOPS-3 (Equip. 30-150)
Description: Ducon Wet Scrubber
Location: Coarse ore out of stockpile, SAG mill in via belts 30-134 & 30-136
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 311-100 on 9/20/89.
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.
17.
 - a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** SSOPS-4, (Equip. 20-270)
Description: Ducon Wet Scrubber

Location: Omnicone Crushers (Equip. #20-262 & 20-263)

Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.

- c. **Rated Operating efficiency:** 95% (per AP-42 11.24.3)
Emissions estimate based on results of source testing on 20-270 on 9/11/92 and on 2/4/93.
- d. **Data necessary:**
 - 1. Record liquid flow rate on a weekly basis, +/- 30% from most recent performance test.
 - 2. Record vacuum (inches of water) on a weekly basis, +/- 30% from most recent performance test.Periodic performance test.

- 18. a. **Test Method:** EPA Reference Method 9
- b. **Identification:** SSOPS-5, Water sprays on belt 20-265
Description: Water Sprays
Location: Belt 20-265 drop to splitter at belts 20-244 & 20-245
Compliance: Opacity shall be kept at 10% or below.
- c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

- 19. a. **Test Method:** EPA Reference Method 9
- b. **Identification:** SSOPM-17 (Equip. 328-E6)
Description: Wheelabrator Baghouse
Location: Mission Mill Lime Bin
Compliance: Opacity shall be kept at 20% or below.
- c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

- 20. a. **Test Method:** EPA Reference Method 9
- b. **Identification:** SSOPS-6 (Equip. 60-502)
Description: Mikro-Pulsaire Baghouse
Location: South Mill Lime Bin
Compliance: Opacity shall be kept at 20% or below.
- c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

- 21. a. **Test Method:** EPA Reference Method 9
- b. **Identification:** SSMP-1 (353-115)

Description: Ducon Wet Scrubber

Location: By-Products Plant

Compliance: Opacity shall be kept at 20% or below.

- c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

22. a. **Test Method:** EPA Reference Method 9

b. **Identification:** HFOPM-1

Description: Water Sprays

Location: Mission circuit transfer of ore to primary crusher dump pocket

Compliance: Opacity shall be kept at 20% or below.

- c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

23. a. **Test Method:** EPA Reference Method 9

b. **Identification:** HFOPS-1

Description: Water Sprays

Location: South Mill transfer of ore to primary crusher dump pocket

Compliance: Opacity shall be kept at 20% or below.

- c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

24. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSOPM-19 (Equip. M309-100)

Description: American Air Filter Roto Clone Scrubber

Location: 48" belt conveyor from secondary crusher to Mission Mill

Compliance: Opacity shall be kept at 20% or below.

- c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

25. a. **Test Method:** EPA Reference Method 9

b. **Identification:** HFOPN-1

Description: Water Sprays

Location: North Mill ore unloading

Compliance: Opacity shall be kept at 20% or below.

- c. **Rated Operating Efficiency:** 90% (per AP-42 11.19.1.2)
- d. **Data necessary:** Periodic visual monitoring, periodic performance test.

13. Site diagram:

See Attachment 5.

- a. Property boundaries
 - i. Outlined in red.
- b. Adjacent streets or roads
 - i. Pima Mine Road
 - ii. Helmet Peak Sahuarita Road
 - iii. Twin Buttes Road
 - iv. Interstate I-19
 - v. Old Nogales Highway
- c. Directional arrow
 - i. As indicated on Location Map
- d. Elevation
 - i. Varies from 2,760 ft. at NE cor. Section 21 (Asarco Tailing) to 3,400 ft. at Section 12 (near Pima Dump)
- e. Closest distance between equipment and property boundary
 - i. 1 1/3 miles to south from South Mill
 - ii. 1 1/4 miles to north from North Crusher
- f. Equipment Layout
 - i. Refer to Figures 2, 3 and 4
- g. Relative location of emission points and non-point emission areas
 - i. Refer to Figures 2, 3 and 4
 - ii. Refer to Figures 5-13 in section 5
- h. Location of emission points and non-point emission areas
 - i. Refer to g.
- i. Location of air pollution control equipment
 - i. Refer to g.

14. *Air pollution control information*

- a. Description of or reference to any applicable test method for determining compliance with each applicable requirement.
- b. Identification, description and location of air pollution control equipment, including spray nozzles and hoods, and compliance monitoring devices or activities.
- c. The rated operating efficiency of air pollution control equipment.
- d. Data necessary to establish required efficiency for air pollution control equipment (e.g. air to cloth ratio for baghouses, pressure drop for scrubbers, and warranty information)
- e. Evidence that operation of the new or modified pollution control equipment will not violate any ambient air quality standards, or PSD increments.

14e. Asarco is applying for a permit renewal, is not seeking to permit any "new or modified pollution control equipment" and hence this question is not applicable to this permit application.

1.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** I.D. SSOPM-1, Equip. 303-21
Description: Ducon wet scrubber
Location: Primary Crushing
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.
2.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** I.D. HFOPM-2, Water spray located at discharge to Coarse Ore Storage.
Description: Water Sprays
Location: Head end of 60 inch belt conveyor (Equip. M309-E1)
Compliance: Opacity shall be kept at 20% or below.
 - c. **Rated Operating Efficiency:** 70% (per AP-42 11.19.1.2)
 - d. **Data necessary:** Periodic visual monitoring, periodic performance test.
3.
 - a. **Test Method:** EPA Reference Methods 5 and 9

- b. **Identification:** SSOPM-2, (Equip. 305-07)
Description: American Air Filter Roto Clone Wet Scrubber
Location: Coarse Ore Storage Out
Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 - d. **Data necessary:**
 - 1. Record liquid flow rate on a weekly basis, \pm 30% from the most recent performance test.
 - 2. Record vacuum (inches of water) on a weekly basis, \pm 30% from most recent performance test.
 Periodic performance test.

- 4.
 - a. **Test Method:** EPA Reference Methods 5 and 9
 - b. **Identification:** I.D. SSOPM 4, 5, 6, & 7 (Equip. 307-104, 307-105, 307-106, & 307-107)
Description: Ducon Wet Scrubbers
Location: Secondary & Tertiary Crushing
Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below..
 - c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 - d. **Data necessary:**
 - 1. Record liquid flow rate on a weekly basis, +/- 30% from most recent performance test.
 - 2. Record vacuum (inches of water) on a weekly basis, +/- 30% from most recent performance test.
 Periodic performance test.

- 5.
 - a. **Test Method:** EPA Reference Method 9
 - b. **Identification:** SSOPM-3, Water Spray at Transfer Tower from belt M307-E21 to belt M307-E23 (Equip. 307-108)

- Description:** Process Water Sprays
Location: Conveyors at Transfer Tower
Compliance: Sprays operational, opacity shall be kept at 20% or below.
- c. **Rated Operating Efficiency:** 70% (per AP-42 11.19.1.2)
 - d. **Data necessary:** Periodic visual monitoring , periodic performance test.
6. a. **Test Method:** EPA Reference Methods 5 and 9
 b. **Identification:** SSOPM-8 & SSOPM-9, (Equip. M311-E37A)
Description: Fine ore drop Wheelabrator baghouse
Location: Belt Conveyor M307-E13 & M307-E44
Compliance: Opacity will be kept at 7% or below.
 c. **Rated Operating Efficiency:** 95%
 d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.
7. a. **Test Method:** EPA Reference Methods 5 and 9
 b. **Identification:** SSOPM-8, 9, 10, 11, 12, & 13 (Equip. M311-E37A through M311-E40A, M311-E78A, M311-E79A)
Description: Fine ore storage Wheelabrator baghouse
Location: Fine ore bins #1-6
Compliance: Opacity will be kept at 7% or below.
 c. **Rated Operating Efficiency:** 95%
 d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.
8. a. **Test Method:** EPA Reference Method 9
 b. **Identification:** SSOPM-14, 15, & 16 (Equip. 311-109, 311-110, 311-111)
Description: Ducon Wet Scrubbers
Location: Fine Ore Bins 1-6 out, rod mill feed belts.
Compliance: Opacity will be kept at 20% or below.
 c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 d. **Data necessary:** Periodic visual monitoring, periodic performance test.
9. a. **Test Method:** EPA Reference Method 9
 b. **Identification:** SSOPN-1, 2, & 3 (Equip. 362-5-3, 362-6-3, 362-7-3)
Description: Ducon Wet Scrubbers
Location: North Primary, Secondary, and Tertiary Crushing
Compliance: Opacity shall be kept at 20% or below.
 c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 d. **Data necessary:** Periodic visual monitoring, periodic performance test.
10. a. **Test Method:** EPA Reference Method 9
 b. **Identification:** HFOPN-2, Water Spray located at discharge to Coarse Ore Storage
Description: Water Sprays

Location: Head end of 42" conveyor (361-08)

Compliance: Opacity shall be kept at 20% or below.

c. **Rated Operating Efficiency:** 70% (per AP-42 11.19.1.2)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

11. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSOPN-4, (Equip. 361-46)

Description: Norblo Baghouse

Location: Coarse Ore Storage Out

Compliance: Opacity shall be kept at 20% or below.

c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

In 3/7/08 letter ASARCO has removed this unit from operation. Unit was not needed to comply w/ any emissions.

AD

12. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSOPN-5, Water Spray located on belt 361-29 to wet material which drops to belt 361-30.

Description: Water Sprays

Location: belt 361-29

Compliance: Opacity shall be kept at 40% or below.

c. **Rated Operating Efficiency:** 70% (per AP-42 11.19.1.2)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

13. a. **Test Method:** EPA Reference Methods 5 and 9

b. **Identification:** SSOPN-6, (Equip. 311-99)

Description: Micropul Baghouse

Location: Fine ore drop, fine ore storage in-fine ore bin

Compliance: Opacity shall be kept at 7% or below.

c. **Rated Operating Efficiency:** 99%(per AP-42 11.24.3)

d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.

14. a. **Test Method:** EPA Reference Methods 5 and 9

b. **Identification:** SSOPN-7 (Equip. 311-101)

Description: Ducon Wet Scrubber

Location: Fine ore storage out, ball mill feed belts, '89 expansion

Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The Asarco Mission Complex monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.

c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)

- d. **Data necessary:**
 - 1. Record liquid flow rate on a weekly basis, +/- 30% from most recent performance test.
 - 2. Record vacuum (inches of water) on a weekly basis, +/- 30% from most recent performance test.

Periodic performance test.

- 15. a. **Test Method:** EPA Reference Method 9
 b. **Identification:** SSOPS-1 (Equip. 10-108)
Description: Ducon Wet Scrubber
Location: South Primary Crusher
Compliance: Opacity shall be kept at 20% or below.
 c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 d. **Data necessary:** Periodic visual monitoring, periodic performance test.

- 16. a. **Test Method:** EPA Reference Methods 5 and 9
 b. **Identification:** SSOPS-2, (Equip. 10-114)
Description: Ducon Wet Scrubber
Location: Transfer point- belt 10-103 to 10-105
Compliance: Opacity will be kept at 7% or below.
 c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 d. **Data necessary:** Periodic check of pressure drop, periodic visual monitoring, periodic performance tests.

- 17. a. **Test Method:** EPA Reference Method 9
 b. **Identification:** HFOPS-2, Water spray located at head of belt 10-105 to wet material dropping onto coarse ore storage.
Description: Water Sprays
Location: Belt 10-105
Compliance: Opacity shall be kept at 20% or below.
 c. **Rated Operating Efficiency:** 70% (per AP-42 11.19.1.2)
 d. **Data necessary:** Periodic visual monitoring, periodic performance test.

- 18. a. **Test Method:** EPA Reference Method 9
 b. **Identification:** SSOPS-3 (Equip. 30-150)
Description: Ducon Wet Scrubber
Location: Coarse ore out of stockpile, SAG mill in via belts 30-134 & 30-136
Compliance: Opacity shall be kept at 20% or below.
 c. **Rated Operating Efficiency:** 95% (per AP-42 11.24.3)
 d. **Data necessary:** Periodic visual monitoring, periodic performance test.

- 19. a. **Test Method:** EPA Reference Methods 5 and 9
 b. **Identification:** SSOPS-4, (Equip. 20-270)
Description: Ducon Wet Scrubber

Location: Omnicone Crushers (Equip. #20-262 & 20-263)

Compliance: A device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device must be certified by the manufacturer to be accurate within +/- 5% of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions. A vacuum gauge attachable to the scrubber inlet duct. The monitoring gauge must be certified by the manufacturer to be accurate within +/- 250 pascals (+/- 1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions. Opacity will be kept at 7% or below.

c. **Rated Operating efficiency:** 95% (per AP-42 11.24.3)

d. **Data necessary:**

1. Record liquid flow rate on a weekly basis, +/- 30% from most recent performance test.
2. Record vacuum (inches of water) on a weekly basis, +/- 30% from most recent performance test.

Periodic performance test.

20. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSOPS-5, Water sprays on belt 20-265

Description: Water Sprays

Location: Belt 20-265 drop to splitter at belts 20-244 & 20-245

Compliance: Opacity shall be kept at 10% or below.

c. **Rated Operating Efficiency:** 70% (per AP-42 11.19.1.2)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

21. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSOPM-17 (Equip. 328-E6)

Description: Wheelabrator Baghouse

Location: Mission Mill Lime Bin

Compliance: Opacity shall be kept at 20% or below.

c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

22. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSOPS-6 (Equip. 60-502)

Description: Mikro-Pulsaire Baghouse

Location: South Mill Lime Bin

Compliance: Opacity shall be kept at 20% or below.

c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

23. a. **Test Method:** EPA Reference Method 9

b. **Identification:** SSMP-1 (353-115)

Description: Ducon Wet Scrubber

Location: By-Products Plant

Compliance: Opacity shall be kept at 20% or below.

c. **Rated Operating Efficiency:** 99% (per AP-42 11.24.3)

d. **Data necessary:** Periodic visual monitoring, periodic performance test.

15. Equipment manufacturer's bulletins and shop drawings

Asarco Mission Complex is not providing any equipment manufacturer's bulletins at this time.

16. Compliance

- (a.) A description of the compliance status of the source with respect to all applicable requirements including, but not limited to:**
 - (i and ii) A demonstration that the source or modification will comply with the applicable requirements contained in Chapter 17.04, 17.08 and 17.28.**

The requirements of Chapter 17.04 (General Provisions) and 17.08 (Ambient Air Quality Standards) do not establish operational requirements for stationary sources. Chapter 17.28 sets forth specific steps PDEQ may take in the event it has cause to believe a violation of the Pima County Code or a permit has occurred. Asarco has cooperated with PDEQ in remedying all alleged violations of the PCC and/or its Title V permit. To the extent that these requirements are applicable to Asarco's Mission Complex, Asarco is in compliance through adherence to Pima County procedures.

- (iii) A demonstration that the source or modification will comply with the applicable requirements contained in Chapter 17.12.**

Asarco's Mission Complex is in compliance with Chapter 17.12. Asarco has obtained and complied with permits necessary under this Chapter. Asarco obtained a minor permit revision and is submitting this permit renewal application pursuant to Article II. Asarco has paid all fees pursuant to Article VI. See also Section 17 of this permit application for a specific requirements and Asarco compliance methodology.

- (iv) A demonstration that the source or modification will comply with the applicable requirements contained in Chapter 17.16.**

Asarco in compliance with the applicable requirements of Chapter 17.16. Asarco's compliance methods are outlined in section 17 of this permit application.

- (v) A demonstration that the source or modification will comply with the applicable requirements contained in Chapter 17.20.**

Asarco is in compliance with the applicable requirements of Chapter 17.20. Asarco conducts emission source monitoring and sampling, as well as recordkeeping and reporting in accordance with its operating permit, number 2026. Specific requirements and compliance methods are outlined in section 17 of this permit application.

- (vi) A demonstration that the source or modification will comply with the applicable requirements contained in Chapter 17.24.**

Asarco is in compliance with the applicable requirements of Chapter 17.24. Asarco collects, records and maintains sufficient information to assure that the compliance status of its operation can readily be ascertained. All records are maintained at the facility.

- (vii) **A demonstration that the source or modification will comply with the applicable requirements contained in Chapter 17.28**

Chapter 17.28 sets forth specific steps PDEQ may take in the event it has cause to believe a violation of the Pima County Code or a permit has occurred. Asarco has cooperated with PDEQ in remedying all alleged violations of the PCC and/or its Title V permit.

16. (b) A compliance schedule as follows:

- (i) **For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.**

To the best of Asarco's knowledge, Mission Complex is in compliance with all applicable requirements listed in Section 17 and Asarco Mission Complex will continue to comply with such requirements during the term of this operating permit.

- (ii) **For application requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.**

Asarco is not aware of any applicable requirements that will become effective during the permit term. Asarco's Mission Complex will meet any such requirements that become effective during the permit term on a timely basis.

- (iii) **A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance.**

Not Applicable

16. (c) A schedule for submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.

Not Applicable

16. (d) The compliance plan content requirements specified in this paragraph shall apply and be included in the acid rain portion of a compliance plan for an affected source.

Not applicable.

17. Compliance certification

a. A certification of compliance with all applicable requirements by a responsible official. The certification should include:

i. Identification of the applicable requirements which are the basis of the certification.

The requirements which are the basis of Asarco's certification are set forth in Attachment 6 of this application. By signing the Certificate of Truth, Accuracy, and Completeness in Attachment 7 of this application, Asarco is certifying it has complied with all the requirements outlined in attachment 6.

ii. A statement of the methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods.

The methods Asarco uses for determining compliance, including monitoring, recordkeeping and reporting requirements and test methods are set forth in Attachment 6 of this application.

iii. A schedule of submission of compliance certifications during the permit term to be submitted no less frequently than annually, or more frequently if specified by the underlying applicable requirement or by the permitting authority.

Pursuant to PCC § 17.12.210.A.2 and Part "B", section III.D.2, of Asarco's Class I Operating Permit, number 2026, Asarco submits a semi-annual compliance certification. The certifications each cover a 6-month period (January through June and July through December). The certification covering January through June must be submitted by July 31 while that covering July through December must be submitted by January 31 of the following year.

iv. A statement indicating the source's compliance with any applicable enhanced monitoring and compliance certification requirements.

To the best of its knowledge, Asarco currently is not subject to any enhanced monitoring requirement. Asarco submits a Semiannual Compliance Certification as discussed in section 17(a)(iii).

- v. **A certification of truth, accuracy, and completeness pursuant to 17.12.160.H.**

The certification of truth, accuracy, and completeness pursuant to 17.12.160.I is included at Attachment 7 to this application.

Applicable Requirements and Compliance Status

ASARCO LLC – Mission Complex

Permit No. 2026

Applicable Requirement	Description	Applicable To	Compliance Determination
<p>Federal Requirements 40 C.F.R. Part 61, Subpart M, National Emission Standards for Asbestos (incorporated by PCC 17.16.530(A)(13))</p>	<p>Notification requirements and standards for demolition and renovation activities involving asbestos</p>	<p>Demolition and renovation activities facility-wide</p>	<p>If applicable, Asarco will comply with all standards for asbestos-containing material demolition or renovation activities by providing the required notification and obtaining required activity permits for any asbestos renovation or demolition activities pursuant to 40 C.F.R. Part 61, Subpart M.</p>
<p>40 C.F.R. Part 60, Subpart LL, Standard of Performance for Metallic Mineral Processing Plants (incorporated by PCC 17.16.490(A)(51))</p>	<p>Standard of Performance for Metallic Mineral Processing Plants : sets emission standards for affected sources</p>	<p>Affected sources defined as 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, railcar unloading station at the mill or concentrator, and control devices controlling emissions from these sources.</p>	<p>Asarco is in compliance with the particulate matter and opacity emission limits in this Subpart. Asarco has installed, calibrated, maintained and operates a device for the continuous measurement of the pressure change of the gas stream through a scrubber and a device for the continuous measurement of the scrubbing liquid flow rate to a wet scrubber. All devices have been certified by the manufacturer to be accurate within regulatory limits and all devices are calibrated on an annual basis in accordance with the manufacturer's instructions. Asarco has performed</p>

Applicable Requirement	Description	Applicable To	Compliance Determination
			<p>performance tests on the wet scrubbers utilizing EPA Method 5 or 17 to determine particulate matter and EPA Method 9 for opacity. Asarco records both the change in pressure of the gas stream and scrubbing liquid flow rate. Asarco provided a written report of performance test results. Asarco records the change in pressure of the gas stream and flow rate weekly and provides semi-annual reports of instances in which the pressure change or flow rate is $\pm 30\%$ of the value obtained during the stack test. Asarco provided all applicable notifications to PDEQ (e.g., initial startup, physical or operations change). Asarco also submits a semiannual compliance certification. All records are retained at the facility.</p>
40 C.F.R. Part 64, Compliance Assurance Monitoring	Compliance Assurance Monitoring	All emissions units that: (1) are subject to an emission limitation or standard for a regulated air pollutant; (2) use a control device to achieve compliance; and (3) have potential pre-control emissions equal to or greater than the amount required for the source to be classified as a major source. Facility-wide	Asarco is submitting a Compliance Assurance Monitoring plan with this permit renewal application that outlines monitoring for each affected emission unit that provides a reasonable assurance of compliance. Asarco will keep all records and submit all reports necessary to comply with 40 C.F.R. § 64.9.
40 C.F.R. Part 68, Risk Management Plan	Accidental Release prevention requirements if regulated substance is present in more than a threshold quantity in a process		At this time, Asarco is below the applicable thresholds. If Asarco determines that it has regulated substances in excess of the thresholds, it

Applicable Requirements and Compliance Status
 Asarco Mission Complex, permit no. 2026 Renewal Application
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Applicable Requirement	Description	Applicable To	Compliance Determination
40 C.F.R. Part 82, Protection of Stratospheric Ozone	Use, labeling, maintenance, service, repair and disposal requirements for product/equipment containing ozone depleting substances	Facility-wide machinery containing ozone depleting substances; motor vehicle air conditioners	will submit a risk management plan by the date specified in 40 C.F.R. Part 68 and certify compliance with such requirements as part of its Semiannual Compliance Certification.
Pima	County	Applicable	Asarco Mission Complex uses only certified technicians for maintenance, service, and repairs of refrigeration equipment.
PCC 17.12.020	Operation prohibited without permit	Facility-wide	Asarco operates pursuant to its Class I Operating Permit, Number 2026. To demonstrate compliance with the conditions of the permit, Asarco submits a Semiannual Compliance Certification. Copies of all records are maintained at the facility.
PCC 17.12.035	Affirmative defenses for excess emissions due to malfunctions, startup, and shutdown	Facility-wide	If applicable, Asarco will maintain the necessary records for asserting the affirmative defense for excess emissions due to malfunctions, startup, and shutdown. All records will be maintained at the facility.
PCC 17.12.040	Reporting Requirements	Facility-wide	Asarco has provided PDEQ notifications of emissions in excess of the PCC or permit limits. Copies of excess emissions reports are maintained at the facility.

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 Asarco Mission Complex, permit no. 2026 Renewal Application
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Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.12.045	Test methods and procedures	Facility-wide	Asarco uses EPA approved test methods for all opacity and performance tests. Identification of test methods is provided with test results. Copies are maintained at the facility.
PCC 17.12.050	Performance tests	Facility-wide	Asarco has completed the performance tests required by its Class I Operating Permit, number 2026, and 40 CFR Part 63, Subpart LL. All test results were submitted to PDEQ and copies are maintained at the facility.
PCC 17.12.080	Permit display or posting	Facility-wide	Asarco maintains a complete copy of the permit onsite. Asarco demonstrates compliance with the requirement by submission of its Semiannual Compliance Certification.
PCC 17.12.140	Applicability – Classes of Permits	Facility-wide	Asarco Mission Complex has obtained a Class I Operating Permit, number 2026, to operate its facility.
PCC 17.12.160	Permit application processing procedures for Class I permits	Facility-wide	Asarco has completed the Standard Permit Application Form and supplied all information required by the Filing Instructions for this permit renewal application. Asarco has submitted its permit renewal application at least six months prior to permit expiration. This permit renewal application contains a certification of truth, accuracy, and completeness. Copies of this renewal application shall be maintained at the facility.

Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.12.170	Public records-confidentiality.	Facility-wide	Asarco has not made a request that any information be held confidential. If such a request is made, Asarco will comply with the applicable regulatory provisions.
PCC 17.12.180	Permit contents for Class I permits.	Facility-wide	Asarco's Class I permit contains all the required elements. To demonstrate compliance with the conditions of the permit, Asarco submits a Semiannual Compliance Certification. Copies of all records are maintained at the facility.
PCC 17.12.200	Permit review by the EPA and affected states.	Facility-wide	EPA and affected states review Asarco Mission Complex's permit renewals. There are no specific methods to demonstrate compliance.
PCC 17.12.220	Compliance plan-certification.	Facility-wide	Asarco submits a Semiannual Compliance Certification, certified by a responsible official for truth, accuracy, and completeness, which sets forth each term or condition in the permit and identifies the method for determining compliance status. Copies are maintained at the facility.
PCC 17.12.230	Facility changes allowed without permit revisions-Class I.	Facility-wide	Asarco has submitted all the information necessary when it has made a facility change allowed without a permit revision. Copies are maintained at the facility.
PCC 17.12.245	Administrative permit amendments.	Facility-wide	If Asarco makes an administrative permit amendment it will provide the information necessary to comply with the applicable regulatory requirements. Copies are maintained at the facility.

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Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.12.255	Minor permit revisions.	Facility-wide	If Asarco makes a minor permit revision it will provide the information necessary to comply with the applicable regulatory requirements. Copies are maintained at the facility.
PCC 17.12.260	Significant permit revisions.	Facility-wide	If Asarco Mission Complex makes a significant permit it will provide the information necessary to comply with the applicable regulatory requirements. Copies are maintained at the facility.
PCC 17.12.280	Permit renewal and expiration.	Facility-wide	Asarco has provided all information necessary for the renewal of the Class I Operating Permit in this renewal application. Copies are maintained at the facility.
PCC 17.12.310	Permit shield	Facility-wide	Asarco has identified all federal, state, and local air pollution control requirements that apply to the source. These are outlined in Asarco's permit renewal application. There are no specific methods to demonstrate compliance.
PCC 17.12.320	Annual emissions inventory questionnaire	Facility-wide	Asarco annually submits its annual emissions inventory questionnaire to the Control Officer. Copies of the questionnaire are retained at the facility.
PCC 17.12.500	Fees: General provisions	Facility-wide	Asarco pays all its annual fees to PDEQ. Records of fee payments are maintained at the facility.

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Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.12.510	Fees related to individual permits	Facility-wide	Asarco pays all its annual fees to PDEQ. Records of fee payments are maintained at the facility.
PCC 17.16.040 SIP Rule 321	Visible Emission Standards: Average optical opacity from each single emission points must be less than 20%.	All emission points	Asarco performs biweekly visual emission observations from point sources at the facility. All surveys are performed by a certified Method 9 observer. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.
PCC 17.16.050 SIP Rule 321 SIP Rule 343	Visibility Limiting Standard: Opacity from nonpoint sources must be less than 20%; prohibition against activities likely to result in an excessive amount of airborne dust without taking reasonable precautions; prohibition on allowing dust beyond the property line without taking reasonable precautions.	Fugitive dust and nonpoint sources	Asarco performs biweekly visual emission observations from nonpoint sources at the facility. Asarco has prepared a Nonpoint Source Monitoring Plan that sets forth monitoring of nonpoint sources (excluding haul roads, access roads, and tailing piles). All surveys are performed by a certified Method 9 observer. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.
PCC 17.16.060 SIP Rule 224 SIP Rule 315	Fugitive Dust Producing Activities: Permittee responsible for controlling windblown dust, dust from haul roads, and dust emitted from land clearing, earthmoving, demolition, trenching, blasting, road construction, mining, and other activities, as applicable. Minimization of dust from roadways.	Areas susceptible to windblown dust, haul roads, locations where land clearing, earthmoving, demolition, trenching, blasting, road construction, mining, and other activities is occurring.	Asarco Mission Complex performs biweekly visual emission observations from nonpoint sources at the facility. Asarco has prepared a Nonpoint Source Monitoring Plan that sets forth monitoring of nonpoint sources (excluding haul roads, access roads, and tailing piles). All surveys are performed

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Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.16.090 (D) (E) & (G) SIP Rule 315	Prohibition against construction of new unpaved service road or unpaved haul road unless dust is suppressed after construction by intermittently watering, limiting access, or applying chemical dust suppressants to the road. Paving specifications must conform to planning or highway department. Prohibition against material transportation without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne.	New and existing roadways.	by a certified Method 9 observer. Asarco Mission Complex monitors vehicular traffic, ensures water is applied as necessary, and ensures appropriate speed limit signs are posted. In its Semiannual Summary of Reports of Required Monitoring, Asarco Mission Complex reports on the results of these surveys. Copies of reports are maintained at the facility.
PCC 17.16.100 SIP Rule 316	Particulate Matter: Prohibition against causing, suffering, allowing or permitting crushing, screening, handling, transporting or conveying of materials or other operations likely to result in	All materials handling and transporting locations.	Asarco suppresses dust on all unpaved roads. If paving is performed, it complies with the planning or highway department. Asarco takes reasonable precautions during all materials transportation activities. Asarco performs biweekly visual emission observations from nonpoint sources at the facility. All surveys are performed by a certified Method 9 observer. Asarco monitors vehicular traffic, ensures water is applied as necessary, and ensures appropriate speed limit signs are posted. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.

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Applicable Requirement	Description	Applicable To	Compliance Determination
	<p>significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne. Dust emissions from the transportation of materials shall be effectively controlled by covering stock loads in open-bodied trucks, limiting vehicular speeds, or other equivalently effective controls.</p>		<p>monitoring of nonpoint sources (excluding haul roads, access roads, and tailing piles). All surveys are performed by a certified Method 9 observer. Asarco Mission Complex monitors vehicular traffic, ensures water is applied as necessary to roadways and processes that generate particulate matter, and ensures appropriate speed limit signs are posted. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.</p>
PCC 17.16.110	<p>Storage piles: Prohibition against causing, suffering, allowing, or permitting organic or inorganic dust producing material to be stacked, piled or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne. Requirement that stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to minimize and control to ensure compliance with visibility limiting standards.</p>	All storage piles.	<p>Asarco Mission Complex performs biweekly visual emission observations from point and nonpoint sources at the facility. All surveys are performed by a certified Method 9 observer. In its Semiannual Summary of Reports of Required Monitoring, Asarco Mission Complex reports on the results of these surveys. Copies of reports are maintained at the facility.</p>
PCC 17.16.120	<p>Tailings piles: Prohibition against causing, suffering, allowing, or permitting construction of mineral tailing piles</p>	Tailings piles	<p>Asarco utilizes spray bars to control emissions from processes that generate particulate matter. Asarco performs</p>

Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.16.130	<p>without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne (e.g., wetting, chemical stabilization, revegetation or other measures approved by the control officer). Prohibition against causing, suffering, allowing, or permitting construction of mineral tailings piles without taking reasonable precautions (i.e., wetting, chemical stabilization and revegetation) to minimize and control to ensure compliance with visibility limiting standards.</p> <p>New and Existing Stationary Source Performance Standards: Establishment of 20% opacity limit for existing point sources.</p>	Existing point sources	<p>biweekly visual emission observations from nonpoint sources, including tailings piles, at the facility. Asarco Mission Complex has prepared a Visual Observation Plan that sets forth monitoring of tailings piles. Asarco monitors tailings piles to ensure that they are smeared during the berm-building mode and wetted as necessary. All surveys are performed by a certified Method 9 observer. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.</p> <p>Asarco performs biweekly visual emission observations from point sources at the facility. All surveys are performed by a certified Method 9 observer. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.</p>
PCC 17.16.140	<p>Compilation of Mass Rates and Concentrations: Prohibition on use of air or other gaseous diluents solely for the purpose of achieving compliance.</p>	All emissions points.	<p>Asarco does not use air or other gaseous diluents solely for the purpose of achieving compliance. Asarco performs biweekly visual emissions observations on both its point and nonpoint sources of emissions. All surveys are performed by a certified Method 9 observer. Asarco performs all performance tests as required by its Class I Operating Permit, number</p>

Applicable Requirements and Compliance Status
 Asarco Mission Complex, permit no. 2026 Renewal Application
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Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.16.230(B, D, & E) SIP Rule 314	Petroleum liquid storage tank must be equipped with a submerged filling device and pumps and compressors which handle volatile organic compounds shall be equipped with mechanical seals or other equipment of equal efficiency.	Owens Corning underground gasoline storage tank with a 20,000 gallon capacity.	2026, using EPA-approved test methods. In its Semiannual Summary of Reports of Required Monitoring, Asarco reports on the results of these surveys. Copies of reports are maintained at the facility.
PCC 17.16.360 SIP Rule 332	Standards of performance for nonferrous metals industry sources: particulate matter emission limits based upon process weight rates. Prohibition against causing, allowing or permitting to be discharged into the atmosphere from any dryer or roaster the operating temperature of which exceeds 700 °F, reduced sulfur in excess of ten percent of the sulfur entering the process as feed.	Mines, mills, concentrators, crushers, screens, material handling facilities, fine ore storage, dryers, roasters, and loaders	The applicable storage tank is equipped with a submerged filling device and the pumps and compressors which handle volatile organic compounds are equipped with mechanical seals or other equipment of equal efficiency. Asarco maintains a file of (1) the type of petroleum liquid stored; (2) the typical Reid vapor pressure; and (3) dates of storage, including dates the vessel is empty. Records are maintained at the facility. Asarco monitors the daily process rates and hours of operation of all material handling facilities. A continuous monitoring system for measurement of sulfur dioxide emissions has been installed, calibrated, maintained, and operated where dryers or roasters are not expected to achieve compliance with the standard. Compliance with these conditions is reported through the Semiannual Compliance Certification.
PCC 17.16.490(A)(51)	Incorporating 40 CFR Part 60, Subpart LL, Standard of Performance for Metallic Mineral Processing Plants.	See section on 40 C.F.R. Part 60, Subpart LL, above.	See section on 40 C.F.R. Part 60, Subpart LL, above.

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Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.16.520(1) & (3)	Any petroleum liquid storage tank of less than forty thousand gallons capacity shall be equipped with a submerged filling device or acceptable equivalent as determined by the control officer for the control of hydrocarbon emissions. All pumps and compressors which handle volatile organic compounds shall be equipped with mechanical seals or other equipment of equal efficiency to prevent the release of organic contaminants into the atmosphere.	Owens Corning underground gasoline storage tank with a 20,000 gallon capacity.	The applicable storage tank is equipped with a submerged filling device and the pumps and compressors which handle volatile organic compounds are equipped with mechanical seals or other equipment of equal efficiency. Asarco maintains a file of (1) the type of petroleum liquid stored; (2) the typical Reid vapor pressure; and (3) dates of storage, including dates the vessel is empty. Records are maintained at the facility.
PCC 17.16.530(A)(13)	Incorporating Part 61, Subpart M, National Emission Standards for Asbestos.	See section on 40 C.F.R. Part 61, Subpart M, above.	See section on 40 C.F.R. Part 61, Subpart M, above.
PCC 17.20.040	Concealment of emissions	Facility-wide	Asarco does not operate in a manner to conceal emissions. Asarco operates pursuant to the conditions of its Class I Operating Permit. Compliance is demonstrated through submission of its Semiannual Compliance Certification.
PCC 17.20.060	Applicability of methodology	Facility-wide	Asarco uses EPA approved test methods for all opacity and performance tests. Identification of test methods is provided with test results. Copies are maintained at the facility.
PCC 17.20.090	Stack sampling	All emission points for which compliance is demonstrated through stack performance tests	Asarco uses EPA approved test methods and the arithmetic mean of at least three runs. If circumstances beyond Asarco's control occur causing sample loss, Asarco will seek Control Officer approval to use the remaining test runs.

Applicable Requirement	Description	Applicable To	Compliance Determination
PCC 17.24.020	Recordkeeping for compliance determinations	Facility-wide	Asarco collects, records, and maintains sufficient information to assure that compliance status can be readily ascertained at any time. Specific records Asarco must maintain to demonstrate compliance are specified in Asarco's Class I Operating Permit, number 2026. All information is retained at the facility for at least five years.
PCC 17.24.030	Recordkeeping for emission inventories	Facility-wide	Asarco collects all the required information to allow the Control Officer to accurately estimate emissions. Specific records Asarco must maintain to demonstrate compliance are specified in Asarco's Class I Operating Permit, number 2026.
PCC 17.24.050	Reporting as a permit requirement	Facility-wide	Asarco complies with all reporting provisions of its Class I Operating Permit, number 2026. Compliance is demonstrated through submission of all required reports (e.g., Semiannual Compliance Certification).
PCC 17.24.060	Reporting for emission inventories	Facility-wide	Asarco submits all requested emissions data when required by the Control Officer.

It is Asarco Mission Complex's understanding that no other rules have been promulgated pursuant to federal or state statutes that are applicable to the source other than those identified in the table above. Asarco Mission Complex will comply with any rule that is subsequently promulgated that applies to activities at Asarco Mission Complex.

18. Acid rain program compliance plan

Not Applicable

19. *Compliance for new major sources or major modifications.*

This application is for a permit renewal. This application is not for a new major source or a major modification.

20. Calculations

See Attachment 8.

Mission PTE S... Sheet
Emissions - High ... Operations

Number	Emissions Source/Activity	Uncontrolled Emissions						Controlled Emissions						Control Eff. %	Control Device		
		PM	PM10	CO	NOX	SO2	PM	PM10	CO	NOX	SO2	PM	PM10			PM	PM10
		(lbs/hr)						(tons/yr)						(tons/yr)			
	Deposition Activities	121.9	16.3				533.9	71.3									
WFOPM-1	Mission Coarse Ore	3.0	1.1				13.0	4.9									
WFOPN-1	South Coarse Ore	0.8	0.3				3.5	1.3									
WFOPS-1	North Coarse Ore	2.6	1.0				11.4	4.3									
WFOPM-2	Mission Cons	0.0	0.0				0.0	0.0									
WFOPS-2	South Cons	0.0	0.0				0.1	0.0									
WFDA-1	Tailings Dams	92.2	5.1				404.0	22.2									
WFDA-2	Overburden Areas	23.3	8.8				101.9	38.5									
SSMP-1	By-Products	19.7	12.1	0.2	0.8	0.0	86.3	53.0	0.7	3.5	0.0	1.0	0.6	4.3	2.6		
CFMP-1	Dryer	19.7	12.0	0.0	0.1	0.3	86.3	52.6	0.1	1.3	0.0	1.0	0.6	4.3	2.6		
CFMP-2	Roasters	0.0	0.0	0.1	0.3	0.0	0.1	0.1	0.3	1.3	0.0						
CFMP-3	Roasters	0.0	0.0	0.1	0.2	0.0	0.1	0.1	0.2	1.0	0.0						

Mining Activities

OFMA-1 Drilling

Value	Units
22,750	holes/yr

Emission Factors (lbs/hole)

TSP	PM-10	AP-42
1.30	0.62	11.9-4

Drilling Overburden

Emission Factors (lbs/hole)	Uncontrolled Emissions (lbs/hr) (tons/yr)			Control Eff. %	Controlled Emissions (lbs/hr) (tons/yr)			Control Device
	PM	PM10	PM		PM	PM10	PM	
TSP	1.30	0.62	1.6	50%	2.1	0.8	9.2	dust shields, watering
			18.5				3.5	

Sample Calculations for Potential to Emit

PM: $[22,750 \text{ holes/yr}] \times [1.30 / 0.8^b \text{ lbs/hole}] \times [100\% - 50\%] \times [1 / 8760 \text{ yr/hrs}] = 2.0 \text{ lbs/hr} = 9.2 \text{ tons/yr}$
 PM-10: $[22,750 \text{ holes/yr}] \times [1.30 / 2.1^c \text{ lbs/hole}] \times [100\% - 50\%] \times [1 / 8760 \text{ yr/hrs}] = 0.8 \text{ lbs/hr} = 3.5 \text{ tons/yr}$

OFMA-2 Blasting

Value	Units
22,750	holes/yr

Blast Pattern (max) 1,050 (30' x 35') ft²

Total Area Blasted 2.39E+07 ft²/yr

Blasts 375 blasts/yr

Area 63,700 ft²/blast

Emission Factors (lbs/blast)

TSP	PM-10	AP-42
8,039	4,180	11.9-2

Blasting (Coal or Overburden)

Emission Factors (lbs/blast)	Uncontrolled Emissions (lbs/hr) (tons/yr)		
	PM	PM10	PM
TSP	8,039	4,180	430
			1,179
			1,884
			784

Sample Calculations for Potential to Emit

Area: $[(22,750 \text{ holes/yr}) \times (30 \text{ ft} \times 35 \text{ ft})] \times [1 / (375 \text{ blasts/yr})] = 63,700 \text{ ft}^2/\text{blast}$
 PM: $[375 \text{ blasts/yr}] \times [(0.0005 \times (63,700)^{1.5}) / 0.8^b \text{ lbs/blast}] \times [1 / 8760 \text{ yr/hrs}] = 430 \text{ lbs/hr} = 1,884 \text{ tons/yr}$
 PM-10: $[375 \text{ blasts/yr}] \times [0.52^c \times 0.0005 \times (63,700)^{1.5} \text{ lbs/blast}] \times [1 / 8760 \text{ yr/hrs}] = 179 \text{ lbs/hr} = 784 \text{ tons/yr}$

Mining Activities

CFMA-2 Blasting (Continued)

Value	Units
8,224	tons/yr

Ammonium Nitrate

Emission Factors (lbs/ton)

CO	NO _x	SO ₂	AP-42
67	17	2	13.3-1

Detonation of Explosives

Emission Factors (lbs/hr)			Uncontrolled Emissions (tons/yr)		
CO	NO _x	SO ₂	CO	NO _x	SO ₂
67	17	2	63	16	1.9
			276	70	8.2

Sample Calculations for Potential to Emit

CO: $[(4356 \times 1.888^b) \text{ tons/yr}] \times [67 \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 63 \text{ lbs/hr} = 276 \text{ tons/yr}$
 NO_x: $[(4356 \times 1.888^b) \text{ tons/yr}] \times [17 \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 16 \text{ lbs/hr} = 70 \text{ tons/yr}$
 SO₂: $[(4356 \times 1.888^b) \text{ tons/yr}] \times [2 \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 1.9 \text{ lbs/hr} = 8.2 \text{ tons/yr}$

CFMA-1 to CFMA-3 Generators

Value	Units
500	hp
250	hrs/yr
1100	hp
4000	hrs/yr
2200	hp
3000	hrs/yr

CFMA-1 Power
 CFMA-1 Usage
 CFMA-2 Power
 CFMA-2 Usage
 CFMA-3 Power
 CFMA-3 Usage

Emission Factors (lbs/hp-hr)

NO _x	CO	SO _x	PM-10	AP-42
0.031	6.68E-03	2.05E-03	2.20E-03	3.3-1

Diesel Indust. Engines

	Uncontrolled Emissions (tons/yr)				
	NO _x	CO	SO _x	PM-10	PM-10
CFMA-1	0.4	9.5E-02	2.9E-02	3.1E-02	0.1
CFMA-2	15.6	3.4	1.0E+00	1.1E+00	4.8
CFMA-3	23.4	5.0	1.5	1.7	7.3
Total	39.4	8.5	2.6	2.8	12.2

Sample Calculations for Potential to Emit

NO_x: $[500 \text{ hp}] \times [250 \text{ hrs/yr}] \times [0.031 \text{ lbs/hp-hr}] \times [1 / 8760 \text{ yr/hrs}] = 0.4 \text{ lbs/hr} = 1.9 \text{ tons/yr}$
 CO: $[500 \text{ hp}] \times [250 \text{ hrs/yr}] \times [6.68E-03 \text{ lbs/hp-hr}] \times [1 / 8760 \text{ yr/hrs}] = 9.5E-02 \text{ lbs/hr} = 0.4 \text{ tons/yr}$

Mining Activities

VFMA-1 Haulage

Value	Units	AP-42
Particle Size Multiplier	PM	
0.36	PM-10	
8.4	%	13.2.2-1
Mean Vehicle Speed	15	mph
Mean # of Wheels	6	
Days >0.01" Precip.	53	days/yr
Control Efficiency	90%	13.2.2-1 B.2-3

Emission Factors (lbs/VMT)	PM	PM-10	AP-42
<i>Komatsu 320</i>	49.1	17.7	13.2.2.2
Mean Vehicle Weight	260	tons	
VMT	500,000	miles/yr	
<i>Komatsu 240</i>	42.0	15.1	13.2.2.2
Mean Vehicle Weight	208	tons	
VMT	400,000	miles/yr	
<i>Terex 170</i>	43.0	15.5	13.2.2.2
Mean Vehicle Weight	215	tons	
VMT	550	miles/yr	

Emission Factors (lbs/VMT)	Uncontrolled Emissions (lbs/hr)		Control Eff. %	Controlled Emissions (lbs/hr)		Control Device	
	PM	PM10		PM	PM10		
<i>Komatsu 320</i>	2804	1009	90%	280	101	dust suppression	
<i>Komatsu 240</i>	1919	691	90%	192	69		
<i>Terex 170</i>	3	1	90%	0	0		
Total Emissions				473	170	2070	745

Sample Calculations for Potential to Emit

PM: $[500,000 \text{ VMT/yr}] \times [1.0 \times 5.9 \times (8.4 / 12) \times (15 / 30) \times (260 / 3)^{0.7} \times (6 / 4)^{0.5} \times (365 - 53) / 365] \text{ lbs/VMT}] \times [100\% - 90\%] \times [1 / 8760 \text{ yr/hrs}] = 280 \text{ lbs/hr} = 1228 \text{ tons/yr}$

PM10: $[400,000 \text{ VMT/yr}] \times [0.36 \times 5.9 \times (8.4 / 12) \times (15 / 30) \times (260 / 3)^{0.7} \times (6 / 4)^{0.5} \times (365 - 53) / 365] \text{ lbs/VMT}] \times [100\% - 90\%] \times [1 / 8760 \text{ yr/hrs}] = 101 \text{ lbs/hr} = 442 \text{ tons/yr}$

Mining Activities

VFMA-2 Dozing

	Value	Units	AP-42
Silt Content of Road	8.4	%	13.2,2-1
Moisture Content	3.5	%	
Hours of Dozing	35,000	hrs/yr	

Emission Factors (lbs/ton)

	TSP	PM-10	AP-42
Bulldozing Overburden	14.4	3.2	11.9-2

Emission Factors (lbs/hr)	Uncontrolled Emissions (tons/yr)		
	PM	PM10	PM
TSP	14	3	72
PM			1.3
PM10			315
			55

Sample Calculations for Potential to Emit

PM: $[(24 \times 365 \times 8) \text{ hrs/yr}] \times [(5.7 \times (8.4)^{1.2} \times (1 / (3.5)^{1.3}) / 0.8^3 \text{ lbs/hr}^2] \times [1 / 8760 \text{ yr/hrs}] = 72 \text{ lbs/hr} = 315 \text{ tons/yr}$
 PM-10: $[(24 \times 365 \times 8) \text{ hrs/yr}] \times [0.75 \times (8.4)^{1.5} \times (1 / (3.5)^{1.5}) \times (1 / 8760 \text{ yr/hrs})] = 13 \text{ lbs/hr} = 55 \text{ tons/yr}$

VFMA-3 Grading

	Value	Units	AP-42
Mean Vehicle Speed	2	mph	
Blading Hours	10,000	hours/yr	
VMT	20,000	miles/yr	
Control Efficiency	90%		B.2-3

Emission Factors (lbs/VMT)

	TSP	PM-10	AP-42
Grading	0.23	0.12	11.9-2

Emission Factors (lbs/VMT)	Uncontrolled Emissions (tons/yr)			Control Eff. %	Controlled Emissions (tons/yr)		
	PM	PM10	PM		PM	PM10	Control Device
TSP	0.23	0.12	0.6	90%	0.1	0.0	dust suppression
PM			0.3		0.3	0.1	
PM10			2.8		0.0	0.1	

Sample Calculations for Potential to Emit

PM: $[(2 \times 10,000) \text{ VMT/yr}] \times [0.04 \times (2)^{2.5} / 0.8^3 \text{ lbs/VMT}] \times [100\% - 90\%] \times [1 / 8760 \text{ yr/hrs}] = 0.1 \text{ lbs/hr} = 0.3 \text{ tons/yr}$
 PM10: $[(2 \times 10,000) \text{ VMT/yr}] \times [0.6 \times 0.051 \times (2)^{2.0} \text{ lbs/VMT}] \times [100\% - 90\%] \times [1 / 8760 \text{ yr/hrs}] = 0.01 \text{ lbs/hr} = 0.1 \text{ tons/yr}$

Mining Activities

HFMA-1 Unloading Overburden

	Value	Units	AP-42
Particle Size Mult.	0.74	for TSP	13.2.4.3
Particle Size Mult.	0.35	for PM10	13.2.4.3
Wind Speed	4.1	miles/hr	(1996 PDEQ Data)
Moisture Content	2.6	%	
Overburden Unloaded	128615469	tons/yr	

Emission Factors (lbs/ton)

	TSP	PM-10	AP-42
Fugitive Drops	1.27E-03	5.99E-04	13.2.4.3

Emission Factors (lbs/ton)	Uncontrolled Emissions (tons/yr)	
	PM	PM10
TSP	23	102
1.27E-03	8.8	39

Sample Calculations for Potential to Emit

PM: $[(68122600 \times 1.888^8) \text{ tons/yr}] \times [(0.74 \times 0.0032 \times (4.1/5)^{1.3} \times (1/(2.6/2)^{1.4}) / 0.8^8 \text{ lbs/ton}] \times [1/8760 \text{ yr/hrs}] = 23 \text{ lbs/hr} = 102 \text{ tons/yr}$

PM10: $[(68122600 \times 1.888^8) \text{ tons/yr}] \times [0.35 \times 0.0032 \times (4.1/5)^{1.3} \times (1/(2.6/2)^{1.4}) \text{ lbs/ton}] \times [1/8760 \text{ yr/hrs}] = 8.8 \text{ lbs/hr} = 39 \text{ tons/yr}$

Ore Processing

Mission Circuit

PM-10/PM 64%
 tons/gr 7.15E-08
 hours/yr 8760

	Grain Loading (gr/dscf)	Flowrate (dscf/hr)	Controlled Emissions			
			(lbs/hr)		(tons/yr)	
			PM	PM-10	PM	PM-10
SSOPM-1	0.030	2123000	9.1	5.8	40	26
SSOPM-2	0.022	353000	1.1	0.7	4.9	3.1
SSOPM-3	0.220	538900	16.9	10.8	74.2	47.5
SSOPM-4	0.022	2290000	7.2	4.6	32	20
SSOPM-6	0.022	2290000	7.2	4.6	32	20
SSOPM-7	0.022	2290000	7.2	4.6	32	20
SSOPM-8	0.022	175000	0.6	0.4	2.4	1.5
SSOPM-9	0.022	175000	0.6	0.4	2.4	1.5
SSOPM-10	0.022	175000	0.6	0.4	2.4	1.5
SSOPM-11	0.022	175000	0.6	0.4	2.4	1.5
SSOPM-12	0.022	175000	0.6	0.4	2.4	1.5
SSOPM-13	0.022	175000	0.6	0.4	2.4	1.5
SSOPM-14	0.022	981000	3.1	2.0	14	8.6
SSOPM-15	0.022	981000	3.1	2.0	14	8.6
SSOPM-16	0.022	981000	3.1	2.0	14	8.6
Subtotal			61	39	269	172

Sample Calculations for Potential to Emit

PM: $[0.03 \text{ gr/dscf}] \times [2123000 \text{ dscf/hr}] \times [7.15\text{E-}08 \text{ tons/gr}] \times [2000 \text{ lbs/ton}] = 9.1 \text{ lbs/hr} = 40 \text{ tons/yr}$

PM10: $[9.1 \text{ lbs/hr}] \times 64\% = 5.8 \text{ lbs/hr} = 26 \text{ tons/yr}$

Ore Processing

Mission Circuit (Continued)

	Value	Units
Ore Throughput	55000	tons/day
Lime Throughput	78	tons/day
Number of Transfer Points SSOPM-17	4	

Emission Factors (lbs/ton)

	PM	PM-10	AP-42
Material Handling	0.12	0.06	11.24-2
Lime Transfer	2.20	0.84	11.17-4

	Emission Factors (lbs/ton)		Uncontrolled Emissions (lbs/hr)				Control Eff. %	Controlled Emissions (lbs/hr)				Control Device
	PM	PM10	(tons/yr)		(tons/yr)			PM	PM10	(tons/yr)		
			PM	PM10	PM	PM10				PM	PM10	
SSOPM-17	2.20	0.84	29	11	125	48	0.3	0.1	1.2	0.5	328-E6	
SSOPM-18	2.20	0.84	7	3	31	12	7.1	2.7	31.2	11.9	none	
SSOPM-19	0.12	0.06	275.0	137.5	1205	602	13.8	6.9	60	30	Amer. RotoClone	
Subtotal							21	10	93	42		

Sample Calculations for Potential to Emit

PM: $[(55000 \times 0.68^b) \text{ tons/day}] \times [2.2 \text{ lbs/ton}] \times [100\% - 99\%] \times [(1 / 24) \text{ days/hr}] = 0.3 \text{ lbs/hr} = 1.2 \text{ tons/yr}$

PM10: $[(55000 \times 0.68^b) \text{ tons/day}] \times [0.84 \text{ lbs/ton}] \times [100\% - 99\%] \times [(1 / 24) \text{ days/hr}] = 0.1 \text{ lbs/hr} = 0.5 \text{ tons/yr}$

PM: $[4] \times [78 \text{ tons/day}] \times [2.20 \text{ lbs/ton}] \times [100\% - 95\%] \times [(1 / 24) \text{ days/hr}] = 1.4 \text{ lbs/hr} = 6.2 \text{ tons/yr}$

PM10: $[4] \times [78 \text{ tons/day}] \times [2.20 / 2.625^b \text{ lbs/ton}] \times [100\% - 95\%] \times [(1 / 24) \text{ days/hr}] = 0.5 \text{ lbs/hr} = 2.4 \text{ tons/yr}$

Ore Processing

Mission Circuit (Continued)

Stack Source Emissions			
(lbs/hr)		(tons/yr)	
PM	PM10	PM	PM10
82	49	361	214

Mission Circuit Total

Ore Processing

North Circuit

PM-10/PM 64%
 tons/gr 7.15E-08
 hours/yr 8760

	Grain Loading (gr/dscf)	Flowrate (dscf/hr)	Controlled Emissions (tons/yr)			
			(lbs/hr)		(tons/yr)	
			PM	PM-10	PM	PM-10
SSOPN-1	0.030	2164000	9.3	5.9	41	26
SSOPN-2	0.030	2164000	9.3	5.9	41	26
SSOPN-3	0.030	2164000	9.3	5.9	41	26
SSOPN-6	0.022	318000	1.0	0.6	4.4	2.8
SSOPN-7	0.022	975000	3.1	2.0	13	8.6
Subtotal			32	20	140	89

Sample Calculations for Potential to Emit

PM: $[0.03 \text{ gr/dscf}] \times [2164000 \text{ dscf/hr}] \times [7.15\text{E-}08 \text{ tons/gr}] \times [2000 \text{ lbs/ton}] = 9.3 \text{ lbs/hr} = 41 \text{ tons/yr}$

PM10: $[9.3 \text{ lbs/hr}] \times 64\% = 5.9 \text{ lbs/hr} = 26 \text{ tons/yr}$

Ore Processing

North Circuit (Continued)

	Value	Units
Ore Throughput	15000	tons/day
<u>Emission Factors (lbs/ton)</u>		
	PM	PM-10 AP-42
Material Handling	0.12	0.06 11.24-2

	Emission Factors (lbs/ton)		Uncontrolled Emissions (lbs/hr)				Control Eff. %	Controlled Emissions (lbs/hr)				Control Device
	PM	PM10	(tons/yr)		(tons/yr)			(tons/yr)		PM	PM10	
			PM	PM10	PM	PM10		PM	PM10			
SSOPN-4	0.12	0.06	75	38	329	164	0%	75.0	37.5	329	164	water sprays
SSOPN-5	0.12	0.06	51	26	223	112	90%	5.1	2.6	22	11	
Subtotal								80.1	40.1	351	175	

Sample Calculations for Potential to Emit

PM: $[15000 \times 0.68^b \text{ tons/day}] \times [0.12 \text{ lbs/ton}] \times [100\% - 90\%] \times [(1 / 24) \text{ days/hr}] = 5.1 \text{ lbs/hr} = 22 \text{ tons/yr}$
 PM10: $[15000 \times 0.68^b \text{ tons/day}] \times [0.06 \text{ lbs/ton}] \times [100\% - 90\%] \times [(1 / 24) \text{ days/hr}] = 2.6 \text{ lbs/hr} = 11 \text{ tons/yr}$

Ore Processing

North Circuit (Continued)

Stack Source Emissions			
(lbs/hr)		(tons/yr)	
PM	PM10	PM	PM10
112	60	491	265

North Circuit Total

Ore Processing

South Circuit

PM-10/PM 64%
 tons/gr 7.15E-08
 hours/yr 8760

	Grain Loading (gr/dscf)	Flowrate (dscf/hr)	Controlled Emissions (tons/yr)		
			PM	PM-10	PM-10
SSOPS-1	0.030	2123000	9.1	5.8	40
SSOPS-2	0.022	448000	1.4	0.9	6.2
SSOPS-3	0.030	448000	1.9	1.2	8.4
SSOPS-4	0.022	1078000	3.4	2.2	15
Subtotal			16	10	69

Sample Calculations for Potential to Emit

PM: $[0.03 \text{ gr/dscf}] \times [2123000 \text{ dscf/hr}] \times [7.15\text{E-}08 \text{ tons/gr}] \times [2000 \text{ lbs/ton}] = 9.1 \text{ lbs/hr} = 40 \text{ tons/yr}$

PM10: $[9.1 \text{ lbs/hr}] \times 64\% = 5.8 \text{ lbs/hr} = 26 \text{ tons/yr}$

Ore Processing

South Circuit (Continued)

	Value	Units
Ore Throughput	48000	tons/day
Lime Throughput	35	tons/day

Emission Factors (lbs/ton)

	PM	PM-10	AP-42
Material Handling	0.01	0.004	11.24-2
Product Loading (Closed Truck)	0.61	0.23	11.17-4
Lime Transfer	2.2	0.84	11.17-4

	Emission Factors (lbs/ton)		Uncontrolled Emissions (lbs/hr)				Control Eff. %	Controlled Emissions (lbs/hr)				Control Device
	PM	PM10	(tons/yr)		(tons/yr)			(tons/yr)		PM	PM10	
			PM	PM10	PM	PM10		PM	PM10			
SSOPS-5	0.01	0.004	20	8.0	88	35	90%	2.0	0.8	8.8	3.5	water sprays
SSOPS-6	0.61	0.23	0.9	0.3	3.9	1.5	99%	0.009	0.003	0.039	0.015	60-502
SSOPS-7	2.20	0.84	3.2	1.2	14	5.4	0%	3.2	1.2	14	5.4	none
Subtotal								5.2	2.0	23	8.9	

Sample Calculations for Potential to Emit

PM: $[48000 \text{ tons/day}] \times [0.01 \text{ lbs/ton}] \times [100\% - 90\%] \times [(1 / 24) \text{ days/hr}] = 2.0 \text{ lbs/hr} = 8.8 \text{ tons/yr}$

PM10: $[48000 \text{ tons/day}] \times [0.004 \text{ lbs/ton}] \times [100\% - 90\%] \times [(1 / 24) \text{ days/hr}] = 0.8 \text{ lbs/hr} = 3.5 \text{ tons/yr}$

PM: $[35 \text{ tons/day}] \times [0.61 \text{ lbs/ton}] \times [100\% - 99\%] \times [(1 / 24) \text{ days/hr}] = 0.009 \text{ lbs/hr} = 0.039 \text{ tons/yr}$

PM10: $[35 \text{ tons/day}] \times [0.23 \text{ lbs/ton}] \times [100\% - 99\%] \times [(1 / 24) \text{ days/hr}] = 0.003 \text{ lbs/hr} = 0.015 \text{ tons/yr}$

Ore Processing

South Circuit (Continued)

Stack Source Emissions			
(lbs/hr)	(tons/yr)		
PM	PM10	PM	PM10
21	12	92	53

South Circuit Total

Ore Processing

Handling Fugitives

	Value	Units
Mission Circuit		
Ore Throughput	55000	tons/day
Concentrate Prod. ⁱ	2077	tons/day
Lime Throughput	78	tons/day
North Circuit		
Ore Throughput	15000	tons/day
South Circuit		
Ore Throughput	48000	tons/day
Concentrate Prod.	1133	tons/day

Emission Factors (lbs/ton)

	PM	PM-10	AP-42
Material Handling	0.12	0.06	11.24-2
Lime Transfer	2.20	0.84	11.17-4

	Emission Factors (lbs/ton)		Uncontrolled Emissions (lbs/hr)				Control Eff. %	Controlled Emissions (lbs/hr)				Control Device
	PM	PM10	(tons/yr)		(tons/yr)			(tons/yr)				
			PM	PM10	PM	PM10		PM	PM10			
HFOPM-1	0.12	0.06	275	138	1205	602	90%	28	14	120	60	water sprays
HFOPM-2	0.12	0.06	275	138	1205	602	90%	28	14	120	60	water sprays
HFOPM-3	0.12	0.06	9.3	4.7	41	20	0%	9.3	4.7	41	20	none
HFOPM-4	0.12	0.06	1.0	0.5	4.5	2.3	0%	1.0	0.5	4.5	2.3	none
HFOPM-5	2.20	0.84	7.2	2.7	31	12	0%	7.2	2.7	31	12	none
HFOPN-1	0.12	0.06	75	38	329	164	90%	7.5	3.8	33	16	water sprays
HFOPN-2	0.12	0.06	75	38	329	164	90%	7.5	3.8	33	16	water sprays
HFOPS-1	0.12	0.06	240	120	1051	526	90%	24	12	105	53	water sprays
HFOPS-2	0.12	0.06	240	120	1051	526	90%	24	12	105	53	water sprays
HFOPS-3	0.12	0.06	5.7	2.8	25	12	0%	5.7	2.8	25	12	none
Total			141	70	618	305						

Sample Calculations for Potential to Emit

PM: [55000 tons/day] x [0.12 lbs/ton] x [100% - 90%] x [(1 / 24) days/hr] = 28 lbs/hr = 120 tons/yr

PM10: [55000 tons/day] x [0.06 lbs/ton] x [100% - 90%] x [(1 / 24) days/hr] = 14 lbs/hr = 60 tons/yr

Deposition Activities

Wind Erosion--Coarse Ore Storage

Value	Units	AP-42
Particle Size Multiplier	0.74 for TSP	13.2.4.3
Particle Size Multiplier	0.35 for PM10	13.2.4.3
Wind Speed	4.1	(1996 PDEQ Data)
Moisture Content	3 %	
Coarse Ore--Mission	2.01E+07 tons/yr	
Coarse Ore--North	5.48E+06 tons/yr	
Coarse Ore--South	1.75E+07 tons/yr	

Emission Factor (lbs/ton)

TSP	PM-10	AP-42
1.04E-03	4.91E-04	13.2.4.3

	Emission Factors (lbs/ton)	Uncontrolled Emissions (tons/yr)				
		TSP	PM10	PM		
WFOPM-1	1.04E-03	4.91E-04	3.0	1.1	13	4.9
WFOPN-1	1.04E-03	4.91E-04	0.8	0.3	3.5	1.3
WFOPS-1	1.04E-03	4.91E-04	2.6	1.0	11	4.3
Total			6.4	2.4	28	11

Sample Calculations for Potential to Emit

PM: $[(55000 \times 365) \text{ tons/yr}] \times [(0.74 \times 0.0032 \times (4.1/5)^{1.3} \times (1/(3/2)^{1.4})) / 0.8^b \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 3.0 \text{ lbs/hr} = 13 \text{ tons/yr}$

PM10: $[(55000 \times 365) \text{ tons/yr}] \times [0.35 \times 0.0032 \times (4.1/5)^{1.3} \times (1/(3/2)^{1.4}) \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 1.1 \text{ lbs/hr} = 4.9 \text{ tons/yr}$

Deposition Activities

Wind Erosion--Concentrate Storage

	Value	Units	AP-42
Particle Size Multiplier	0.74	for TSP	13.2.4.3
Particle Size Multiplier	0.35	for PM10	13.2.4.3
Wind Speed	4.1		(1996 PDEQ Data)
Moisture Content	7	%	
Concentrate--North ⁱ	7.58E+04	tons/yr	
Concentrate--South	4.13E+05	tons/yr	

Emission Factor (lbs/ton)

	TSP	PM-10	AP-42
Wind Erosion	3.17E-04	1.50E-04	13.2.4.3

	Emission Factors (lbs/ton)	Uncontrolled Emissions (lbs/hr)				
		PM	PM10	PM		
WFOPM-2	3.17E-04	1.50E-04	3.4E-03	1.3E-03	1.5E-02	5.7E-03
WFOPS-2	3.17E-04	1.50E-04	1.9E-02	7.1E-03	8.2E-02	3.1E-02
Total		2.2E-02	8.4E-03	9.7E-02	3.7E-02	

Sample Calculations for Potential to Emit

PM: $[(1100 \times 0.1 \times 1.888^a \times 365) \text{ tons/yr}] \times [(0.74 \times 0.0032 \times (4.1 / 5)^{1.3} \times (1 / (7 / 2)^{1.4})) / 0.8^b \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 3.4\text{E-}03 \text{ lbs/hr} = 1.5\text{E-}02 \text{ tons/yr}$

PM10: $[(1100 \times 0.1 \times 1.888^a \times 365) \text{ tons/yr}] \times [0.35 \times 0.0032 \times (4.1 / 5)^{1.3} \times (1 / (7 / 2)^{1.4}) \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 1.3\text{E-}03 \text{ lbs/hr} = 5.7\text{E-}03 \text{ tons/yr}$

Deposition Activities

Wind Erosion--Tailings Dams

Value	Units
2.30E-05	acre/ft ²
4600	acres
5%	

Tailings Dams
Uncontrolled

Emission Factor (lbs/ton)

	PM	PM-10	AP-42
Erosion--Tailings	3513	193	Hayden PM-10 SIP, Appendix E

Emission Factors (lbs/acre-yr)	Uncontrolled Emissions (lbs/hr)		
	PM	PM10	PM
PM	3513	193	92
PM10	92	5.1	404
WFDA-1			22

Sample Calculations for Potential to Emit

PM: [4600 acres] x [0.05] x [3513 lbs/acre-yr] x [1 / 8760 yr/hrs] = 68 lbs/hr = 296 tons/yr
 PM10: [4600 acres] x [0.05] x [193 lbs/acre-yr] x [1 / 8760 yr/hrs] = 3.7 lbs/hr = 16 tons/yr

Deposition Activities

Wind Erosion-Overburden Deposition Areas

Value	Units	AP-42
Particle Size Multiplier	0.74 for TSP	13.2.4.3
Particle Size Multiplier	0.35 for PM10	13.2.4.3
Wind Speed	4.1	(1996 PDEQ Data)
Moisture Content	2.6 %	
Overburden	1.29E+08 tons/yr	

Emission Factor (lbs/ton)	PM-10	AP-42
TSP	PM-10	AP-42
1.27E-03	5.99E-04	13.2.4.3

Wind Erosion

Emission Factors (lbs/ton)	Uncontrolled Emissions (tons/yr)		
	PM	PM10	PM
TSP	PM	PM10	PM
1.27E-03	5.99E-04	23	8.8
WFDA-2			102
			39

Sample Calculations for Potential to Emit

PM: $[(68122600 \times 1.888^8) \text{ tons/yr}] \times [(0.74 \times 0.0032 \times (4.1 / 5)^{1.3} \times (1 / (2.6 / 2)^{1.4})) / 0.8^b \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 19 \text{ lbs/hr} = 81 \text{ tons/yr}$

PM10: $[(68122600 \times 1.888^8) \text{ tons/yr}] \times [0.35 \times 0.0032 \times (4.1 / 5)^{1.3} \times (1 / (2.6 / 2)^{1.4}) \text{ lbs/ton}] \times [1 / 8760 \text{ yr/hrs}] = 8.8 \text{ lbs/hr} = 39 \text{ tons/yr}$

Deposition Activities

Wind Erosion--Tailings Dams

Value	Units
2.30E-05	acre/ft ²
4600	acres
5%	

Tailings Dams
Uncontrolled

Emission Factor (lbs/ton)

PM	PM-10	AP-42
3513	193	Hayden PM-10 SIP, Appendix E

Erosion--Tailings

Emission Factors (lbs/acre-yr)	Uncontrolled Emissions (lbs/hr)		PM10
	PM	PM10	
3513	193	92	5.1
WFDA-1			404
			22

WFDA-1

Sample Calculations for Potential to Emit

TSP: $[4600 \text{ acres}] \times [0.05] \times [3513 \text{ lbs/acre-yr}] \times [1 / 8760 \text{ yr/hrs}] = 68 \text{ lbs/hr} = 296 \text{ tons/yr}$

PM10: $[4600 \text{ acres}] \times [0.05] \times [193 \text{ lbs/acre-yr}] \times [1 / 8760 \text{ yr/hrs}] = 3.7 \text{ lbs/hr} = 16 \text{ tons/yr}$

By-Products Plant

Drying

Conc. Throughput	Value	Units
	2000	lbs/hr

Emission Factors (lbs/ton)		
PM	PM-10	AP-42
19.7	12	11.24-2

SSMP-1	Emission Factors (lbs/ton)		Uncontrolled Emissions (lbs/hr)				Control Eff. %	Controlled Emissions (lbs/hr)				Control Device
	PM	PM10	PM	PM10	PM	PM10		PM	PM10	PM	PM10	
19.7	12	20	12	12	86	53	95%	1.0	0.6	4.3	2.6	353-115

Sample Calculations for Potential to Emit

PM: $[2000 \text{ lbs/hr}] \times [19.7 \text{ lbs/ton}] \times [100\% - 99\%] \times [1 / 2000 \text{ ton/lbs}] = 0.2 \text{ lbs/hr} = 0.9 \text{ tons/yr}$

PM10: $[2000 \text{ lbs/hr}] \times [12 \text{ lbs/ton}] \times [100\% - 99\%] \times [1 / 2000 \text{ ton/lbs}] = 0.1 \text{ lbs/hr} = 0.5 \text{ tons/yr}$

By-Products Plant

CFMP-1 to CFMP-3 Dryers

	Value	Units
CFMP-1 Size	3000000	BTU
CFMP-1 Gas Fired	2857	ft ³ /hour
CFMP-2 Size	3000000	BTU
CFMP-2 Gas Fired	2857	ft ³ /hour
CFMP-3 Size	2500000	BTU
CFMP-3 Gas Fired	2381	ft ³ /hour

Emission Factors (lbs/10⁶ ft³)

	SO ₂	NO ₂	CO	PM (all PM-10)		AP-42
				Filterable	Condens.	
Natural Gas Comb.	0.6	100	21	4.5	7.4	1.4

	Uncontrolled Emissions						
	(lbs/hr)			(tons/yr)			
	SO ₂	NO ₂	CO	PM (all PM-10) Filterable	PM (all PM-10) Condens.	CO	Total PM
CFMP-1	1.7E-03	0.3	0.1	1.3E-02	2.1E-02	3.4E-02	7.5E-03
CFMP-2	1.7E-03	0.3	0.1	1.3E-02	2.1E-02	3.4E-02	7.5E-03
CFMP-3	1.4E-03	0.2	0.1	1.1E-02	1.8E-02	2.8E-02	6.3E-03
Total	4.9E-03	0.8	0.2	0.1	0.1	0.7	0.4

Sample Calculations for Potential to Emit

SO₂: [2857 ft³/hr] x [(1 / 10⁶) 10⁶ ft³/ft³] x [0.6 lbs/10⁶ ft³] = 1.7E-03 lbs/hr = 7.5E-03 tons/yr

NO₂: [2857 ft³/hr] x [(1 / 10⁶) 10⁶ ft³/ft³] x [100 lbs/10⁶ ft³] = 0.3 lbs/hr = 1.3 tons/yr