

**PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR PROGRAM**

33 N. Stone Avenue, Suite 700 • Tucson, Arizona 85701 • Phone: (520) 724-7400

AIR QUALITY OPERATING PERMIT

(As required by Title 17.12, Article II, Pima County Code)

ISSUED TO

**FREEMPORT-MCMORAN SIERRITA, INC.
6200 W. DUVAL MINE ROAD
GREEN VALLEY, ARIZONA 85629**

*This air quality operating permit does not relieve applicant of responsibility for
meeting all air pollution regulations*

PERMIT NUMBER 6067

PERMIT CLASS I

ISSUED:

EXPIRES:

SIGNATURE

Rupesh Patel, Air Permit Manager, PDEO
TITLE

Summary

This Class I operating permit renewal (Permit) is issued to Freeport-McMoRan Sierrita, Inc. (FMSI) for the operation of a copper and molybdenum mining and processing facility located at 6200 West Duval Mine Road, Green Valley, Pima County, AZ 85622. FMSI's Title V Permit was previously issued by the Arizona Department of Environmental Quality under permit # 42862. The permitting and enforcement authority for the facility was transferred to Pima County Department of Environmental Quality (PDEQ) on September 1, 2009. Following the transfer of jurisdiction, PDEQ re-issued the Permit under permit #6067.

This Permit includes voluntarily accepted limits on particulate matter (PM), particulate matter less than 10 microns in diameter (PM₁₀), and sulfur dioxide (SO₂). The Permit also incorporates the following plant changes implemented through previously approved and authorized Permit revisions. The incorporated changes are:

1. Replacement of numerous existing crushers with new crushers with an associated increase in nominal plant capacity;
2. Addition of a quaternary crushing circuit;
3. Addition of back-up pollution control systems;
4. Replacement of fine ore bin baghouses with new cartridge dust collectors; and
5. Replacement of wet scrubbers at the fine crushing plant with new cartridge collectors.
6. Installation of two back-up generators.
7. Installation of a boiler at the Twin Buttes Electrowinning facility.

Operations at FMSI include conventional open-pit mining, crushing and conveying, milling, concentration of mineral values by bulk flotation followed by differential flotation, leaching and roasting of molybdenum disulfide, rhenium recovery, molybdenum disulfide and molybdenum trioxide packaging, and leaching of oxide ore with solution extraction/electrowinning processes. FMSI also operates a magnetic steel recovery plant, a decant solids handling facility, electrical generators, process heaters, boilers, screening equipment, road rock crushing equipment and other support facilities. The FMSI metallic mineral mining and concentration facility produces copper concentrate, copper cathode, molybdenum disulfide, molybdenum trioxide, and rhenium. FMSI utilizes wet scrubbers, baghouses, cartridge filter dust collectors, and water sprays on various processes to control emissions of particulate matter. A lime slurry scrubber is used to control emissions of SO₂ from the molybdenum roasting operation.

The facility is a "major source" for Title V operating permit program purposes (PDEQ Class I) with potential emissions of the following pollutants greater than 100 tons per year: PM. The facility is a minor source for Prevention of Significant Deterioration (PSD) purposes. Permit conditions to limit the source emissions to avoid PSD are not required.

This renewal permit is issued in accordance with Title 17 of the Pima County Code (PCC). All definitions, terms, and conditions used in this permit conform to those in PCC and Title 40 of the Code of Federal Regulations (CFR), except as otherwise defined in this permit. All terms and conditions in this permit are federally enforceable by the Administrator of the U.S. Environmental Protection Agency, unless specifically identified as a Pima County locally enforceable requirement.

The facility controls fugitive particulate matter by a combination of methods including, but not limited to, retention of native vegetation, application of dust and erosion chemical suppressants, road watering, use of wet scrubbers and baghouses. The facility also has Compliance Assurance Monitoring (CAM) plans for several pollution specific emission units. The CAM plans are designed to provide reasonable assurance of compliance with applicable requirements under the Clean Air Act.

The following facility wide potential to emit emissions are for informational purposes only and are used to establish the “baseline” emissions for the source. They are not intended to be enforceable emission limits unless otherwise noted in Part B of this permit.

The emission rates were obtained from information contained in the renewal application submitted December 27, 2013.

Emission Source	Regulated Pollutant (in tons per year)							
	PM	PM ₁₀	PM _{2.5}	NO _x	SO ₂	CO	VOC	HAPs (Total)
Facility Wide Potential to Emit	97.93	72.27	20.56	81.04	81.05	49.77	72.73	4.13

PART A: GENERAL PROVISIONS

(References to A.R.S. are references to the Arizona Revised Statutes, references to A.A.C. are references to the Arizona Administrative Code, and references to PCC are references to Title 17 of the Pima County Code)

I. PERMIT EXPIRATION AND RENEWAL

[PCC 17.12.180.A.1 and PCC 17.12.160.D.1]

- A. This permit is valid for a period of five years from the date of issuance of the permit.
- B. The Permittee shall submit an application for renewal of this permit at least 6 months, but not greater than 18 months prior to the date of permit expiration.

II. COMPLIANCE WITH PERMIT CONDITIONS

[PCC 17.12.180.A.8.a and b]

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of Arizona air quality statutes A.R.S. Title 49, Chapter 3, and Pima County air quality rules. Any permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
- B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

[PCC 17.12.180.A.8.c and PCC 17.12.270]

- A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination; or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- B. The permit shall be reopened and revised under any of the following circumstances:
 - 1. Additional applicable requirements under the Clean Air Act become applicable to a major source with a remaining permit term of three or more years. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to PCC 17.12.280.B. Any permit reopening required pursuant to this paragraph shall comply with provisions in PCC 17.12.280 for permit renewal and shall reset the five-year permit term.
 - 2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Control Officer, excess emissions offset plans shall be deemed to be incorporated into the Class I permit.
 - 3. The Control Officer or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - 4. The Control Officer or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.

- C. Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Such reopenings shall be made as expeditiously as practicable.

IV. POSTING OF PERMIT

[PCC 17.12.080]

The Permittee who has been granted an individual permit by PDEQ shall maintain a complete copy of the permit onsite. If it is not feasible to maintain a copy of the operating permit onsite, the Permittee may request, in writing, to maintain a copy of the permit at an alternate location. Upon written approval by the Control Officer, the Permittee must maintain a complete copy of the permit at the approved alternative location.

V. FEE PAYMENT

[PCC 17.12.180.A.9 & PCC 17.12.510]

The Permittee shall pay fees to the Control Officer pursuant to PCC 17.12.510.

VI. ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE

[PCC 17.12.320]

- A. The Permittee shall complete and submit an annual emissions inventory questionnaire. The questionnaire is due by March 31 or ninety days after the Control Officer makes the inventory form available, whichever occurs later, and shall include emission information for the previous calendar year. These requirements apply whether or not a permit has been issued and whether or not a permit application has been filed.
- B. The questionnaire shall be on a form provided by or approved by the Control Officer and shall include the information required by PCC 17.12.320.B

VII. COMPLIANCE CERTIFICATION

[PCC 17.12.220.A.2]

The Permittee shall submit to the Control Officer a compliance certification that describes the compliance status of the source with respect to each permit condition.

- A. The compliance certification shall include the following:
 - 1. Identification of each term or condition of the permit that is the basis of the certification.
 - 2. Identification of the method(s) or other means used by the Permittee for determining the compliance status of the source with each term and condition during the certification period. The methods and other means shall include, at a minimum, the methods and means required under PCC 17.12.180 (A)(3). If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with Section 113(c)(2) of the Clean Air Act, which prohibits knowingly making a false certification or omitting material information.
 - 3. The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall identify each deviation and take it into account in the compliance certification.
 - 4. For emission units subject to 40 CFR 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR 64 occurred.

- 5. Other facts the Control Officer may require to determine the compliance status of the source.
- B. The Permittee shall also submit a copy of compliance certifications to the EPA Administrator. The address for the EPA Administrator is:

EPA Region 9 Enforcement Office, 75 Hawthorne St (Air-5), San Francisco, CA 94105

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS [PCC 17.12.220.A.3]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required by this permit shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY [PCC 17.12.220.A.4]

The Permittee shall allow the Control Officer or the authorized representative of the Control Officer upon presentation of proper credentials to:

- A. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
- B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
- C. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
- E. Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD [PCC 17.12.160.D.3]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Clean Air Act (Hazardous Air Pollutants), then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING [PCC 17.12.040]

A. Excess Emissions Reporting [PCC 17.12.040]

1. Excess emissions shall be reported as follows:

a. The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit. The report shall be in 2 parts as specified below:

i. Notification by telephone or facsimile within 24 hours of the time the Permittee first learned of the occurrence of excess emissions that includes all available information from paragraph XI.A.1.b of Part A. The number to call to report excess emissions is **520-724-7400**. The facsimile number to report excess emissions is **520-838-7432**.

ii. Detailed written notification by submission of an excess emissions report within 72 hours of the notification under XI.A.1.a.i of Part A. Notifications should be sent to:

PDEQ Air Program 33 N. Stone Avenue, Suite 700, Tucson, Arizona 85701.

b. The excess emission report shall contain the following information:

i. The identity of each stack or other emission point where the excess emission occurred;

ii. The magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

iii. The time and duration or expected duration of the excess emissions;

iv. The identity of the equipment from which the excess emissions emanated;

v. The nature and cause of the emissions;

vi. The steps taken, if the excess emissions were the result of a malfunction, to remedy the malfunction and the steps taken or planned to prevent the recurrence of the malfunctions; and

vii. The steps that were or are being taken to limit the excess emissions; and

viii. If the source's permit contains procedures governing source operation during periods of startup or malfunction and the excess emissions resulted from startup or malfunction, a list of the steps taken to comply with the permit procedures.

2. In the case of continuous or recurring excess emissions, the notification requirements of this Section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in the notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period or changes in the nature of the emissions as originally reported shall require additional notification pursuant to XI.A.1.a and b of Part A.

B. Permit Deviations Reporting

[PCC 17.12.180.A.5.b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken to mitigate emissions. Prompt reporting shall mean that the report was submitted to the Control Officer by certified mail, email; facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to an emergency or within two working days of the time when the Permittee first learned of the occurrence of a deviation from a permit requirement.

C. Emergency Provision

[PCC 17.12.180.E]

1. An "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emission attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the conditions of PCC 17.12.180.E.3 are met.
3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An emergency occurred and that the Permittee can identify the cause or causes of the emergency;
 - b. At the time of the emergency, the permitted facility was being properly operated;
 - c. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - d. The Permittee submitted notice of the emergency to the Control Officer by certified mail, hand delivery, or facsimile transmission within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule

[ARS § 49-480.F.3 & 5]

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Control Officer within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown.

[PCC 17.12.035]

1. Applicability

This rule establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Clean Air Act,
- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act,
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. E.P.A., or
- d. Included in a permit to meet the requirements of PCC 17.16.590.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. The Permittee of a source with emissions in excess of an applicable emission limitation due to malfunction has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee of the source has complied with the reporting requirements of XIII.B of this Part and has demonstrated all of the following:

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the operator;
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the owner or operator satisfactorily demonstrated that the measures were impracticable;
- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
- e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
- f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

- g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in PCC Chapter 17.08 that could be attributed to the emitting source;
 - h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
 - i. All emissions monitoring systems were kept in operation if at all practicable; and
 - j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.
3. Affirmative Defense for Startup and Shutdown
- a. Except as provided in XI.E.3.b of Part A, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. The Permittee of a source with emissions in excess of an applicable emission limitation due to startup and shutdown has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the owner or operator of the source has complied with the reporting requirements of XIII.B of Part A and has demonstrated all of the following:
 - i. The excess emissions could not have been prevented through careful and prudent planning and design;
 - ii. If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
 - iii. The source's air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - iv. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
 - v. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
 - vi. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in PCC Chapter 17.08 that could be attributed to the emitting source;
 - vii. All emissions monitoring systems were kept in operation if at all practicable; and
 - viii. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.
 - b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to XI.E.2 of Part A.

4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to XI.E.2 of Part A.

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under XI.E.2 or 3 of Part A, the Permittee shall demonstrate, through submission of the data and information required by XI.E.1 – 5 and XIII.B of Part A, that all reasonable and practicable measures within the owner or operator's control were implemented to prevent the occurrence of the excess emissions.

XII. RECORDKEEPING REQUIREMENTS

[PCC 17.12.180.A.4]

A. The Permittee shall keep records of all required monitoring information including recordkeeping requirements established pursuant to PCC 17.12.190, where applicable, for the following:

1. The date, place as defined in the permit, and time of sampling or measurements;
2. The date(s) analyses were performed;
3. The name of the company or entity that performed the analyses;
4. A description of the analytical techniques or methods used;
5. The results of such analyses; and
6. The operating conditions as existing at the time of sampling or measurement.

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

C. All required records shall be maintained using a normal business electronic recordkeeping format or printed records including handwritten forms or logbooks utilizing indelible ink.

XIII. (RESERVED)

XIV. DUTY TO PROVIDE INFORMATION

[PCC 17.12.180.A.8.e & PCC 17.12.160.H]

A. The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee, for Class I sources, shall submit a copy of such records directly to the Control Officer along with a claim of confidentiality.

- B. If the Permittee fails to submit any relevant facts or if the Permittee has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed permit.

XV. PERMIT AMENDMENT OR REVISION

[PCC 17.12.245, PCC 17.12.255 & PCC 17.12.260]

The Permittee shall apply for a permit amendment or revision as applicable for changes that do not qualify as facility changes without revision under XVI of Part A, in accordance with the following:

- A. Administrative Permit Amendment (PCC 17.12.245);
- B. Minor Permit Revision (PCC 17.12.255);
- C. Significant Permit Revision (PCC 17.12.260).

The applicability and requirements for such action are defined in the above referenced regulations.

XVI. FACILITY CHANGES ALLOWED WITHOUT PERMIT REVISIONS

[PCC 17.12.230]

- A. A facility with a Class I permit may make changes without a permit revision if all of the following apply:
 - 1. The changes are not modifications under any provision of Title I of the Clean Air Act (Air Pollution Prevention and Control) or under modifications as defined in A.R.S. 49-401.01;
 - 2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;
 - 3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;
 - 4. The changes satisfy all requirements for a minor permit revision under PCC 17.12.255; and
 - 5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.
- B. The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if the substitution meets all of the requirements of XVI.A, D and E of Part A.
- C. Except for sources with authority to operate under general permits, permitted sources may trade increases and decreases in emissions within the permitted facility, as established in the permit under PCC 17.12.180.A.12 if an applicable implementation plan provides for the emissions trades, without applying for a permit revision and based on the seven working days' notice prescribed in XVI.D of Part A. This provision is available if the permit does not provide for the emissions trading as a minor permit revision.

- D. For changes that are not modifications for any provision of Title I of the CAA and the changes do not exceed the emissions allowable under the permit (whether expressed therein as the rate of emissions or in terms of total emissions); A written notice, by certified mail or hand delivery, shall be received by the Control Officer and the Administrator a minimum of seven (7) working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change but must be provided as far in advance of the change, or if advance notification is not practicable as soon after the change as possible.
- E. Each notification shall include:
1. When the proposed change will occur;
 2. A description of the change;
 3. Any change in emissions of regulated air pollutants;
 4. The pollutants emitted subject to the emissions trade, if any;
 5. The provisions in the implementation plan that provide for the emissions trade with which the source will comply and any other information as may be required by the provisions in the implementation plan authorizing the trade;
 6. If the emissions trading provisions of the implementation plan are invoked, then the permit requirements with which the source will comply; and
 7. Any permit term or condition that is no longer applicable as a result of the change.
- F. The permit shield described in PCC 17.12.310 shall not apply to any change made under XVI.A through C of this Part. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the implementation plan authorizing the emissions trade.
- G. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under PCC 17.12.180.A.11 shall not require any prior notice under XVI Part A.
- H. Notwithstanding any other part of this Section, the Control Officer may require a permit to be revised for any change that when considered together with any other changes submitted by the same source under the provisions of PCC 17.12.230 over the term of the permit, do not satisfy XVI.A of this Part.

XVII. TESTING REQUIREMENTS

[PCC 17.12.050]

A. Operational Conditions During Testing

Performance tests shall be conducted "under such conditions as the Control Officer shall specify to the plant operator based on representative performance of the source. The owner or operator shall make available to the Control Officer such records as may be necessary to determine the conditions of the performance tests. Operations during start-up, shutdown, and malfunction (as defined in PCC 17.04.340.A) shall not constitute representative operational conditions unless otherwise specified in the applicable requirement.

B. Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual, 40 CFR 52; Appendices D and E, 40 CFR 60; Appendices A through F; and 40 CFR 61, Appendices B and C unless modified by the Control Officer pursuant to PCC 17.12.050.B.

C. Test Plan

At least 14 working days prior to performing a test, the Permittee shall submit a test plan to the Control Officer, in accordance with PCC 17.12.050.D and the Arizona Testing Manual.

D. Stack Sampling Facilities

The Permittee shall provide or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;
2. Safe sampling platform(s);
3. Safe access to sampling platform(s); and,
4. Utilities for sampling and testing equipment.

E. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Control Officer's approval, be determined using the arithmetic mean of the results of the other two runs. If the Control Officer or the Control Officer's designee is present, tests may only be stopped with the Control Officer's or such designee's approval. If the Control Officer or the Control Officer's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test.

F. Report of Final Test Results

A written report of the results of all performance tests shall be submitted to the control officer within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual.

XVIII. PROPERTY RIGHTS

[PCC 17.12.180.A.8.d]

This permit does not convey any property rights of any sort, or any exclusive privilege to the Permittee.

XIX. SEVERABILITY CLAUSE

[PCC 17.12.180.A.7]

The provisions of this permit are severable. In the event of a challenge to any portion of this permit that results in any provision of this permit being held invalid, the remainder of this permit shall not be affected thereby.

XX. PERMIT SHIELD

[PCC 17.12.310, PCC 12.12.230.F & PCC 12.12.255.H]

Compliance with the conditions of this permit shall be deemed compliance with any applicable requirement identified in the permit as of the date of permit issuance, provided that such applicable requirements are included and expressly identified in the permit. The permit shield shall not apply to any change made pursuant to XV.B and XVI of Part A.

XXI. ACCIDENT PREVENTION REQUIREMENTS UNDER THE CLEAN AIR ACT (CAA Section 112(r))

Should this stationary source, as defined in 40 CFR Part 68.3, become subject to the accidental release prevention regulations in Part 68, then the Permittee shall submit a risk management plan (RMP) by the date specified in Section 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 CFR Part 70 and VII of Part A.

XXII. ASBESTOS REQUIREMENTS (Demolition/ Renovation)

[40 CFR 61, Subpart M]

Should this stationary source, pursuant to 40 CFR 61, Subpart M become subject to the National Emission Standards for Hazardous Air Pollutants - Asbestos for asbestos regulations when conducting any renovation or demolition at this premises, then the Permittee shall submit proper notification as described in 40 CFR Subpart M and shall comply with all other applicable requirements of subpart M. The Permittee shall keep records demonstrating compliance with 40 CFR 61, Subpart M.

XXIII. STRATOSPHERIC OZONE DEPLETING SUBSTANCES

[40 CFR 82 & PCC 17.16.710]

The Permittee shall not use, sell, or offer for sale any fluid as a substitute material for use in any motor vehicle, residential, commercial, or industrial air conditioning system, refrigerator or freezer unit, or other cooling or heating device designed to use a chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) compound as a working fluid, unless such fluid has been approved for sale and such use by the Administrator. The Permittee shall keep records demonstrating compliance with 40 CFR 82, Subpart.

ATTACHMENT B

SPECIFIC CONDITIONS

I. RELATIONSHIP OF PERMIT TO APPLICABLE STATE IMPLEMENTATION PLAN

[ARS § 49-404.c]

This permit is issued pursuant to the provisions of the Arizona Revised Statutes (ARS) and constitutes an Installation Permit for the purpose of the applicable State Implementation Plan.

II. FACILITY-WIDE REQUIREMENTS

- A. The Permittee shall have on site or on call a person certified in EPA Reference Method 9. [PCC 17.12.180.A.3.c]
- B. At the time the compliance certifications required by Condition VII of Attachment "A" are submitted, the Permittee shall submit reports of all monitoring activities required by this Attachment performed in the same six month period as applies to the compliance certification period. [PCC 17.12.180.A.5.a]
- C. The Permittee shall maintain required records of all emission related maintenance activities performed at the facility. [PCC 17.12.180.A.4.b]
- D. The Permittee shall operate all air pollution control and monitoring equipment identified in Attachment "C" in accordance with vendor-supplied operations and maintenance instructions. If vendor-supplied operations and maintenance instructions are not available, the Permittee shall prepare an Operation and Maintenance Plan, which provides adequate information to properly operate and maintain the equipment in good working order. In the absence of vendor-supplied operations and maintenance instructions, the Permittee shall operate the equipment in accordance with the Operation and Maintenance Plan. [PCC 17.12.180.A.2]
- E. **Visibility Limiting Standard** [Pima County State Implementation Plan Rule 343] [PCC 17.16.050.D]
1. The Permittee shall not cause, suffer, allow, or permit diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions become airborne. Sources may be required to cease temporarily the activity or operation which is causing or contributing to the emissions until reasonably necessary and feasible precautions are taken.
 2. Condition II.E.1 shall not apply when wind speeds exceed twenty-five (25) miles per hour (using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by the National Weather Service). This exception does not apply if control measures have not been taken or were not commensurate with the size or scope of the emission source.
 3. Condition II.E.1 shall not apply to the generation of airborne particulate matter from undisturbed land.
- F. The following requirements apply to the operation, maintenance, monitoring, and testing of affected facilities subject to New Source Performance Standards (NSPS) as indicated in Attachment "C". The Permittee shall comply with the General Provisions of 40 CFR Part 60, Subpart A. [PCC 17.16.490.A & 40 CFR 60, Subpart A]
1. All requests, reports, applications, submittals, and other communications to the Control Officer pursuant to PCC 17.16.490.A and 40 CFR Part 60 shall be submitted in duplicate to the EPA Region 9 office. [PCC 17.16.490.A & 40 CFR 60.4(a)]

2. The Permittee shall comply with applicable general notification requirements contained in 40 CFR 60.7(a), including but not limited to: [PCC 17.16.490(A)(1) & 40 CFR 60.7(a)]
- a. Notification of the date of construction of units that are subject to NSPS, as indicated in Attachment “C”. Notification shall be postmarked no later than 30 days after such date.
 - b. Notification of the actual date of initial startup of such equipment postmarked within 15 days of after such date.
 - c. A notification of the anticipated date for conducting the opacity observations required by §60.11(e)(1) of 40 CFR Subpart A. The notification shall also include, if appropriate, a request for the Department to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.
3. The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the associated air pollution control equipment; or any periods during which an associated continuous monitoring system or monitoring device is inoperative. [PCC 17.16.490(A)(1) & 40 CFR 60.7(b)]
4. The Permittee shall submit excess emissions and monitoring systems performance reports and/or summary report forms on a semiannual basis as required by 40 CFR 60.7(c) and (d). [PCC 17.16.490(A)(1), 40 CFR 60.7(c) & (d)]
5. The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records. [PCC 17.16.490(A)(1) & 40 CFR 60.7(f)]
6. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate this facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.* Determination of whether acceptable operating and maintenance procedures are being used shall be based on information available to the Control Officer and the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [PCC 17.12.350.A.3.d, PCC 17.16.490(A)(1) & 40 CFR 60.11(d)]
- [Material Permit Conditions are indicated by underline and italics]**
7. For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in 40 CFR Part 60, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [PCC 17.16.490(A)(1) and 40 CFR 60.11(g)]
8. The Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission, which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with opacity standard or with a standard, which is based on the concentration of a pollutant in the gases discharged to the atmosphere. [PCC 17.16.490(A)(1) & 40 CFR 60.12]
9. The Permittee shall comply with the “General notification and reporting requirements” found in 40 CFR 60.19. [PCC 17.16.490(A)(1) & 40 CFR 60.19]

G. The following requirements apply to all operations not subject to NSPS as indicated in Attachment “C”.

1. Except as provided in Condition II.G.2, compliance with the emission limits established in this permit shall be determined by the performance tests specified in this permit. [PCC 17.12.050.G]
2. In addition to performance tests, compliance with specific emission limits may be determined by:
[PCC 17.12.050.H]
 - a. Opacity tests;
 - b. Emission limit compliance tests specifically designated as such in the regulation establishing the emission limit to be complied with;
 - c. Continuous emission monitoring, where applicable quality assurance procedures are followed and where it is designated in the permit or in an applicable requirement to show compliance.
3. Nothing in this permit shall be so construed as to prevent the utilization of measurements from emissions monitoring devices or techniques not designated as performance tests as evidence of compliance with applicable good maintenance and operating requirements. [PCC 17.12.050.I]

H. General Requirements for Compliance Assurance Monitoring (CAM)

1. For emission units identified in Attachment “C” as subject to CAM, the Permittee shall conduct the monitoring required by this permit condition upon issuance of the renewal permit, except that if a monitoring device must be installed on existing equipment, the Permittee is allowed 180 days following permit issuance to install such device. The Permittee shall conduct the monitoring required by this permit condition upon commencement of operation of new equipment identified in Attachment “C” as being subject to the CAM program under 40 CFR 64. At all times, the owner or operator shall maintain the required monitoring activities, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
[PCC 17.12.180.A.3.b, 40 CFR 64.6(d) & 40 CFR 64.7(a)-(b)]
2. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant –specific emission units are operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this condition, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
[PCC 17.12.180.A.3.b & 40 CFR 64.7(c)]
3. Response to excursions
 - a. Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emission unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown, or malfunction, and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action, or any necessary follow-up actions to return operations to within the indicator range, designated condition, or below applicable emission limitation or

7. CAM Plans

- a. Wet Scrubbers (Equipment ID 053 and 054) [PCC 17.12.180.A.3.b]
- i. Indicators: Scrubber liquid flow rate and pressure differential; [40 CFR 64.3(a)(1)]
 - ii. Monitoring Approach:
Scrubber flow rate and pressure differential shall be measured at least once per hour. Three-hour block averages shall be determined using the one-hour readings. [40 CFR 64.3(b)(4)(iii)]
 - iii. Quality Assurance/Quality Control (QA/QC): Operate and maintain flow/pressure indicators in a manner consistent with good air pollution control practices. [40 CFR 64.3(b)(3)]
 - iv. Indicator Range/Threshold: [40 CFR 64.3(b)(2) & (3)]
 - (1) For scrubber flow rate, the range shall be $\pm 30\%$ of the average obtained during the most recent performance test.
 - (2) For pressure differential, the range shall be ± 30 percent from the average obtained during the most recent performance test.
 - v. Excursions Determinations: An excursion event is any of the following conditions: [40 CFR 64.6(c)(2)]
 - (1) A 3-hour block during which the average scrubber pressure differential differs from the average obtained during the most recent performance test by more than $\pm 30\%$.
 - (2) A 3-hour block during which the average liquid flow rate is more than $\pm 30\%$ of the average obtained during the most recent performance test.
- b. Cartridge Dust Collectors, (Equipment ID 009-017, 201-204, 301-312) [PCC 17.12.180.A.3.b]
- i. Indicators: Pressure differential and opacity; [40 CFR 64.3(a)(1)]
 - ii. Monitoring Approach: [40 CFR 64.3(b)(4)(iii)]
 - (1) Pressure differential across the baghouse/cartridge dust collector shall be measured by a pressure gauge. Pressure differential readings shall be taken and recorded daily.
 - (2) Visible emissions from the control equipment shall be monitored bi-weekly according to the procedure outlined in Condition II.I.3.a,
 - iii. Quality Assurance/Quality Control (QA/QC): Operate and maintain pressure indicators in a manner consistent with good air pollution control practices. [40 CFR 64.3(b)(3)]
 - iv. Indicator Range/Threshold: [40 CFR 64.3(a)(2) & (3)]
 - (1) Pressure differential range for baghouses shall be 1 to 6 inches of water.
 - (2) Pressure differential for the cartridge dust collectors shall be 0 to 6 inches of water.
 - (3) For opacity from cartridge dust collectors, the threshold shall be any visible emission.

- v. Excursion/Exceedance Determinations: An excursion event is any of the following conditions:
[40 CFR 64.6(c)(2)]
- (1) Any pressure differential reading outside the indicator range is an excursion.
 - (2) For cartridge dust collectors, any visible emission is an excursion.
- c. Electrostatic Precipitator (Equipment ID 058) [PCC 17.12.180.A.3.b]
- i. Indicators: Primary current and primary voltage [40 CFR 64.3(a)(1)]
 - ii. Monitoring Approach: [40 CFR 64.3(b)(4)(iii)]

Primary current shall be continuously measured by an ammeter. Primary voltage shall be continuously measured by a voltmeter. The data acquisition and handling system shall compute one-hour averages of the continuous readings. [40 CFR 64.3(b)(4)(iii)]
 - iii. Quality Assurance/Quality Control (QA/QC): Operate and maintain voltage/current indicators in a manner consistent with good air pollution control practices. [40 CFR 64.3(b)(3)]
 - iv. Indicator Range/Threshold: [40 CFR 64.3(a)(2) & (3)]
 - (1) For primary current, at least two fields are operated at greater than 25 amps in one electrostatic precipitator when feed is entering one roaster and at least two fields are operated at greater than 25 amps in two electrostatic precipitators when feed is entering two roasters.
 - (2) For primary voltage, at least two fields are operated at greater than 200 volts in one electrostatic precipitator when feed is entering one roaster and at least two fields are operated at greater than 200 volts in two electrostatic precipitators when feed is entering two roasters.
- v. Excursions Determinations: An excursion event is any of the following conditions:
- (1) Any one-hour average primary current reading that is outside the indicator range.
 - (2) Any one-hour average primary voltage reading that is outside the indicator range. [40 CFR 64.3(a)(2) & (3)]
- vi. Secondary voltage and secondary current (or power) may be used as indicators in place of primary current and primary voltage, if the Permittee submits a written request to the Control Officer which includes proposed indicator ranges/thresholds and supporting information and if the Control Officer provides written approval. If the Permittee receives such approval, the Permittee shall use the same monitoring approach, quality assurance/quality control, and excursion determination procedures as would apply to primary current and voltage. [40 CFR 64.6]

I. Periodic Opacity Monitoring Procedure

[PCC 17.12.180.A.3.c]

1. Unless otherwise noted elsewhere in the permit, this permit condition applies to all non-fugitive emission units that are vented outdoors and that are subject to an opacity standard.
2. Visible Emission Observation Plan

- a. Observation Plan

The Permittee shall maintain on site a copy of the most recently approved visible emissions observation plan that includes the following:

- i. A list of emission units that are subject to this permit condition; and
- ii. Each unit's baseline visible emission level and applicable opacity limit, except that a baseline visible emission level is not required for those generators which are subject to the annual operating hour limits of Condition XV.B (i.e., baseline level is required only for the magnetic steel recovery plant generator, the portable screen plant generator, and the primary crushing plant generator).
- iii. For existing particulate matter emission units, which have not previously undergone a baseline visible emission analysis and for which a baseline visible emission level is required, the Permittee shall complete the visible emission analysis during the first visible emission survey conducted after permit issuance in accordance with Condition II.I.3.a.

- b. New Equipment

- i. Within 180 days following startup of a new particulate matter emission unit or a new particulate matter control device, the Permittee shall conduct a certified Method 9 observation. The result of this initial Method 9 observation shall be the baseline opacity level for the new emission unit or control device. Within 10 days of establishing the baseline opacity, the Permittee shall report the baseline opacity to the Control Officer and shall update the observation plan.
- ii. Following startup of a new particulate matter emission unit or particulate control device, but prior to the Method 9 observation required above (Condition II.I.2.b.i), the Permittee shall assume that the baseline opacity level is equal to the opacity limit. Any exceedance of the opacity limit shall be reported in accordance with Attachment "A", Condition XII.

3. Visible Emission Observation Procedures

- a. Unless identified elsewhere in the permit, a certified Method 9 observer shall conduct, in accordance with the approved observation plan, bi-weekly surveys of visible emissions from all listed emission units. Surveys shall be conducted when the emission unit is in operation but the Permittee need not operate the equipment for survey purposes only. The results of each required survey shall be recorded and kept on site. [PCC 17.12.050]
- b. If the observer, during the visual survey, does not see visible emissions that on an instantaneous basis appears to exceed the baseline level previously established, then the observer shall keep a record of the name of the observer, the date on which the observation was made, and the results of the observation.
- c. If the observer sees visible emissions that on an instantaneous basis appear to exceed the baseline level, then the observer shall if practicable take a six-minute Method 9 observation of the plume.

- d. If the six-minute opacity of the plume exceeds the baseline level but is less than the opacity standard, the Permittee shall initiate corrective action, as necessary, to reduce opacity to or below the baseline level. The Permittee shall make a record of the following:
 - i. Location, date, and time of the test; and
 - ii. The results of the Method 9 observation.
 - e. If the six-minute opacity of the plume exceeds both the baseline level and the opacity standard, then the Permittee shall do the following:
 - i. Adjust or repair the controls or equipment to reduce opacity to or below the baseline level; and
 - ii. Report the event as an excess emission for opacity under Attachment "A", Condition XII.
 - f. If the six-minute opacity of the plume is less than the baseline, the observer shall make a record of the following:
 - i. Location, date, and time of the test; and
 - ii. The results of the Method 9 observation.
 - g. If corrective actions fail to reduce opacity to or below the baseline level, the Permittee shall adopt the following course of action:
 - i. Document all corrective action taken; and
 - ii. Initiate procedures to re-establish the baseline within 48 hours in accordance with Condition II.I.3.h.
 - h. If necessitated by the results of the opacity monitoring, the Permittee may re-establish the baseline opacity level. Reestablishment of the baseline shall be performed utilizing the same procedures used in setting the initial baseline level. Within 30 days of re-establishing the baseline opacity, the Permittee shall report the results to the Control Officer. The report shall also contain a description of the need for re-establishing the baseline(s).
4. Except for changes to the baseline level necessitated by the results of the biweekly observations, changes to the observation plan shall not be made without the prior approval of the Control Officer.

J. Facility-wide Sulfur Dioxide (SO₂) Limitation

[PCC 17.12.190.B]

[Material Permit Conditions are indicated by underline and italics]

1. *The Permittee shall not cause to be discharged into the atmosphere from the following emission units SO₂ emissions in excess of 240 tons per year, calculated monthly as a rolling 12-month total.*
Source ID 058, Molybdenum Roasting
Source ID 062, Natural Gas Heaters and Boilers
Source ID 126, Stationary Engines

2. Monitoring, Recordkeeping, and Reporting

[PCC 17.12.180.A.3, 4, & 5]

- a. The Permittee shall compute the monthly and 12-month rolling total SO₂ emission rate using the following procedure:
 - i. The Permittee shall use the SO₂ continuous emission monitoring system (CEMS) data in order to compute the monthly SO₂ emission rate (in tons) from Source ID 058, Molybdenum Roasting.
 - ii. The Permittee shall calculate the monthly SO₂ emission rate for Source ID 062, Natural Gas Heaters and Boilers, using the procedure described in Condition XI.D. The Permittee shall calculate the monthly SO₂ emission rate for all stationary engines using the procedure described in Condition XV.C.4.
 - iii. Using the data of condition II.J.2.a.i and II.J.2.a.ii, above, the Permittee shall compute the total SO₂ emission rate for the site for each month.
 - iv. The monthly total shall be added to the monthly total for each of the previous 11 months to compute the 12-month rolling total SO₂ emission rate.
- b. The calculations required by Condition II.J.2.a shall be performed and results documented by the 30th day of the following calendar month for the previous 12-month period.
- c. Each individual monthly and 12-month rolling total SO₂ emission rate in the reporting period shall be included in the semiannual monitoring report required by Condition IX.C.3.f and g. of Attachment "B".

K. Facility-wide Particulate Matter (PM) and Particulate Matter Less than 10 Microns (PM₁₀) Limitation

1. Emission Limitation **[Material Permit Conditions are indicated by underline and italics]**

The Permittee shall not cause to be discharged into the atmosphere non-fugitive source PM or PM₁₀ emissions in excess of 230 tons per year, calculated monthly as a rolling 12-month total

[PCC 17.12.190.B & 17.12.350.A.3.a]

2. Monitoring, Recordkeeping, and Reporting

[PCC.17.12.180A.3, 4 & 5]

- a. The Permittee shall utilize all monthly PM and PM₁₀ emission rate data required by this permit to calculate and record the monthly and rolling 12-month total PM and PM₁₀ emission rate for all non-fugitive emission units. For purposes of completing the rolling 12-month PM and PM₁₀ emission calculations, the Permittee shall assume that PM and PM₁₀ emission rates are equal, unless the Permittee has demonstrated otherwise through performance testing.
- b. The calculations required by Condition II.K.2.a shall be performed and results documented by the 30th day of the following calendar month for the previous 12-month period.

L. Permit Shield

[PCC 17.12.310]

Compliance with the requirements of Condition II shall be deemed compliance with Pima County Code 17.16.050(D).

III. GENERAL REQUIREMENTS FOR METALLIC MINERAL PROCESSES SUBJECT TO 40 CFR 60 SUBPART LL

A. Applicability

This Section applies to all equipment subject to NSPS as indicated in Sections I through IX in Tables C-1 and C-2 of Attachment "C". The requirements of this Section are in addition to the source-specific requirements included elsewhere in the permit.

B. Emission Limits and Standards

[40 CFR 60.382(a)(1)]

1. The Permittee shall not cause to be discharged into the atmosphere from an affected facility any stack emissions that contain PM in excess of 0.05 grams per dry standard cubic meter (0.022 grains per dry standard cubic foot).

2. Visible Emissions - Opacity Standard

[40 CFR 60.382(a)(2) & (b) & PCC 17.12.350.A.3.f]

[Material Permit Conditions are indicated by underline and italics]

- a. *The Permittee shall not cause to be discharged into the atmosphere from an affected facility any stack emissions that exhibit greater than 7 percent opacity, unless the stack emissions are discharged using a wet scrubber emission control device;*
- b. *On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the Permittee shall not cause to be discharged into the atmosphere from an affected facility any process fugitive (including fugitive emissions from a process building) emissions that exhibit greater than 10 percent opacity.*

C. Monitoring, Recordkeeping, and Reporting

1. For each scrubber, the Permittee shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through the scrubber. The monitoring device 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 the manufacturer's instructions.

[40 CFR 60.384(a) and PCC 17.12.350.A.3.c]

[Material Permit Conditions are indicated by underline and italics]

2. For each scrubber, the Permittee shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the scrubbing liquid flow rate to the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 5 percent of the design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with the manufacturer's specifications.

[40 CFR 60.384(b) and PCC 17.12.350.A.3.c]

[Material Permit Conditions are indicated by underline and italics]

3. The Permittee shall submit semi-annual reports to the Control Officer and the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) or liquid flow rate differ by more than ± 30 percent from the average obtained during the most recent performance test. These reports shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

[40 CFR 60.385(c) & (d)]

4. The Permittee shall comply with the fugitive source monitoring procedures described in Condition XIX.

[PCC 17.12.180.A.3.c]

D. Permit Shield

[PCC 17.12.310]

Compliance with requirements of Condition III shall be deemed compliance with 40 CFR 60.382(a)(1), (a)(2), and (b), 40 CFR 60.384(a) and (b), 40 CFR 60.385(b) through (d), 40 CFR 60.386 (b) and (c).

IV. GENERAL REQUIREMENTS FOR NON-FERROUS METAL INDUSTRIAL PROCESSES SUBJECT TO PIMA COUNTY CODE (PCC) 17.16.360

A. Applicability

This Section applies as indicated in Sections I through IX in Tables C-1 and C-2 of Attachment “C”. The requirements of this Section are in addition to the source-specific requirements included elsewhere in the permit. The provisions of this section are applicable to the following affected facilities: mines, mills, concentrators, crushers, screens, material handling facilities, fine ore storage, dryers, roasters, and loaders.

B. Particulate Matter/Opacity Standard

1. Emission Limits and Standards

- a. The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere from any of the equipment in any one hour in total quantities in excess of the amount calculated by one of the following equations:

For Process Sources Having Process Weight Rates of 30 Tons per Hour or Less:

$$E = 3.59P^{0.62}$$

For Process Sources Having a Process Weight Rate Greater than 30 Tons per Hour:

$$E = 17.31P^{0.16}$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour. The total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.

[Pima County Code 17.16.360(B)]

- b. Visible Emissions - Opacity Standard

[PCC 17.16.040.A & B]

- i. The opacity of emissions from any of the equipment into the atmosphere shall not be greater than 20 percent as measured by EPA Reference Method 9.
- ii. Where the presence of uncombined water is the only reason for the exceedance of this visible emissions requirement, such exceedance shall not constitute a violation.

2. Monitoring, Record Keeping and Reporting Requirements

- a. The Permittee shall record the daily process rates and hours of operation of all material handling facilities. For the purpose of this permit condition material handling facilities shall mean those pieces of equipment marked with a “Y” in the “Material Handling Facility” column of Attachment “C” of this permit.

[PCC 17.16.360.F]

- b. The Permittee shall comply with the fugitive source monitoring procedures described in Condition XIX. [PCC 17.12.180.A.3.c]

3. Performance Testing Requirements

- a. The reference methods in 40 CFR 60, Appendix A shall be used to determine compliance with the standards prescribed in Condition IV.B as follows:
- i. Method 5 for the concentration of particulate matter and the associated moisture content;
 - ii. Method 1 for sample and velocity traverses;
 - iii. Method 2 for velocity and volumetric flow rate;
 - iv. Method 3 for gas analysis and calculation of excess air, using the integrated sample technique.
- b. For Method 5, Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the Control Officer. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160⁰ C. (320⁰F). [PCC 17.16.360.H]

4. Permit Shield [PCC 17.12.310]

Compliance with the requirements of Condition IV shall be deemed compliance with PCC 17.16.130(B) & (C), PCC 17.16.360

V. SPECIFIC REQUIREMENTS FOR THE PRIMARY CRUSHING CIRCUITS

A. Applicability

This Section is applicable to the equipment listed under Section II of Attachment "C", Tables C-1 and C-2.

B. Operating Limitations

1. Material Throughput Limitations [PCC 17.12.180.A.2.17.12.350.A.3.c]
[Material Permit Conditions are indicated by underline and italics]

The total combined amount of material throughput for the primary crushing operations shall not exceed 55,845,000 tons per year, calculated on a 12-month rolling total basis.

2. Throughput Monitoring, Recordkeeping, and Reporting Requirements [PCC 17.12.180.A.3.c]

- a. The Permittee shall maintain a record of the following:
- i. An up-to-date description of the control device(s) and their configuration used to meet the particulate matter limits for each primary crusher
 - ii. The total material throughput measured for each primary crusher during each day of operation.

- b. The Permittee shall use the daily material throughput data required by Condition V.B.2.a.iii to compute and record the total amount of material processed in each crusher and the combined total amount processed in both crushers during each month. Using the results of the monthly material throughput calculation, the Permittee shall compute and record the total amount of material processed during each rolling 12-month period.
- c. The calculations required by Condition V.B.2.b, shall be performed and results recorded by the 30th day of each calendar month for the previous 12-month period.
- d. Any calendar month during which the combined rolling 12-month total material throughput exceeds the limitation in Condition V.B.1.a, shall constitute an exceedance.

C. Particulate Matter and Opacity Limits

1. Emission Limitations/Standards

- a. The Permittee shall not cause to be discharged into the atmosphere PM emissions in excess of the limitations shown in Condition III.B.1. [40 CFR 60.382(a)(1), (a)(2), & (b)]
- b. The Permittee shall not cause to be discharged into the atmosphere from any emission unit controlled by a cartridge dust collector, gases that contain PM or PM₁₀ in excess of 0.0005 pounds emitted per ton of material processed in the associated primary crusher.
[PCC 17.12.190.B and PCC 17.12.350.A.3.a]
[Material Permit Conditions are indicated by underline and italics]

2. Air Pollution Control Requirements

[Material Permit Conditions are indicated by underline and italics]

- a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate each primary crusher and the associated cartridge dust collector in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.
[40 CFR 60.11(d) and PCC 17.12.350.A.3.e]
- b. The Permittee shall maintain and operate ancillary pollution control devices including spray bars, duct work and hoods used to capture particulate matter emissions, to meet the emission standards in Conditions III.B and V.C.1.
[PCC 17.12.180.A.2 and 17.12.350.A.3.e]

3. Monitoring, Record Keeping and Reporting Requirements

- a. Monthly Emission Calculations [PCC 17.12.180.A.3]

In order to complete the calculations required by Condition II.K, the Permittee shall calculate and record monthly PM and PM₁₀ emissions from each primary crushing emission unit according to the following procedures.

- i. The Permittee shall compute the pounds of PM and PM₁₀ emitted from each emission unit during each month as the product of the material throughput for the month (Condition V.B.2.b expressed in tons) and the average emission factor determined using the procedure of Condition V.C.4 (expressed as pounds of PM and PM₁₀ emitted per ton of material throughput). The Permittee shall convert the pounds of PM and PM₁₀ emitted per month to tons of PM and PM₁₀ emitted per month for the primary crushing circuits.
- ii. The Permittee shall maintain a record of all monthly calculations and resulting monthly emission rates for each emission unit.

iii. The Permittee shall use the emission rates computed for each emission unit and for each month (tons PM and PM₁₀ emitted per month) in order to compute the facility-wide monthly and 12-month rolling total PM and PM₁₀ emission rate required by Condition II.K.2.a.

b. For each primary crushing circuit and associated control device(s), the Permittee shall comply with the monitoring, recordkeeping, and reporting requirements of this permit, including Conditions II.H.1 through II.H.6, II.H.7.a or b (as applicable), II.I, and III.C.

[PCC 17.12.180.A.3.b & A.3.c]

4. Performance Testing Requirements

[PCC 17.12.180.A.3.c & PCC 17.12.050]

a. For each primary crusher, the Permittee shall conduct PM performance tests in order to determine the pounds of PM emitted per hour, the grams emitted per dry standard cubic meter, and the emission factor (pounds of PM emitted per ton of material processed). The results of the test shall be used to determine whether the Permittee is in compliance with Conditions III.B.1 and V.C.1. Tests for the Cartridge Dust Collectors for the Primary Crushers (Attachment "C", ID 113) shall be conducted once per permit term.

b. These performance tests required for the cartridge dust collectors (ID 113) shall be conducted in accordance with Reference Method 5 or 17 in 40 CFR 60, Appendix A and the specifications included in Condition III.D.

c. During each performance test, the Permittee shall monitor and record the material throughput to each crusher. The Permittee shall record the total throughput for each test run and the average hourly throughput for the three test runs.

d. The Permittee shall determine the emission factor (pounds PM emitted per ton of material processed) for each emission unit by dividing the pound-per-hour PM emission rate for the unit determined in accordance with Condition V.C.4.a by the average hourly material throughput for the associated crusher(s) (tons material throughput per hour) determined according to Condition V.C.4.c. The Permittee shall also determine the average emission factor for each emission unit by computing the average of all emission factors determined since issuance of this permit.

e. The Permittee shall keep a record of the emission factor and the average emission factor shall include it in the test report required by Attachment "A", Condition XVIII.G.

f. The average emission factor (or the emission factor if only a single factor is available) determined according to Condition V.C.4.d shall be used to compute the monthly PM emission rate according to the procedure of Condition V.C.3.a.

g. If the PM emission rate (grams per dry standard cubic meter) exceeds the limit of Condition III.B.1, the Permittee shall report the excess emission in accordance with Attachment "A", Condition XII. If the PM emission factor (not the average emission factor) determined during the test exceeds the limit of Condition V.C.1, then the Permittee shall report the excess emission in accordance with Attachment "A", Condition XII. [PCC 17.12.180.A.2]

h. Optional PM₁₀ Testing

The Permittee may conduct PM₁₀ emission testing according to EPA Reference Method 201A in order to develop a unit-specific PM₁₀ emission factor for use in computing the unit-specific and facility-wide PM₁₀ emission rates in accordance with Conditions V.C.3.a and II.K. If a PM₁₀ emission test is not conducted, the Permittee shall assume that the PM₁₀ emission rate is equal to the PM emission rate. [PCC 17.12.180.A.2]

- i. Visible Emissions [PCC 17.12.050]

During each PM performance test required by Condition V.C.4, the Permittee shall conduct one six-minute Method 9 performance test on the emission unit to measure the opacity of non-fugitive emissions subject to the opacity limitations of Condition III.B.2. Any exceedance of the applicable opacity limitation shall be reported as an excess emission in accordance with Attachment “A”, Condition XII.

5. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 60.382(a)(1), (a)(2), & (b), for the equipment subject to this section.

VI. SPECIFIC REQUIREMENTS FOR THE FINE ORE CRUSHING OPERATION

A. Applicability

This Section is applicable to the equipment listed under Section IV of Attachment “C”,

B. Particulate Matter and Opacity Limits

1. Emission Limitations/Standards [Material Permit Conditions are indicated by underline and italics]

a. *The Permittee shall not cause to be discharged into the atmosphere from the Fine Ore Crushing Operation, PM emissions in excess of the limitations shown in Condition III.B.*
 [40 CFR 60.382(a)(1), (a)(2), & (b), & PCC 17.12.350.A.3.a]

b. *The Permittee shall not cause to be discharged into the atmosphere emissions that contain PM or PM₁₀ in excess of the following:* [PCC 17.12.190.B]

Source ID	Emission Factor Limitation (Pounds of PM or PM ₁₀ per Ton of Material Throughput)
201	0.0006 (vented inside building)
202	0.0006 (vented inside building)
203	0.0012
204	0.0012
301	0.001 (vented inside building)
302	0.002
303	0.001 (vented inside building)
304	0.002
305	0.001 (vented inside building)
306	0.002
307	0.001 (vented inside building)
308	0.002
309	0.001 (vented inside building)
310	0.002
311	0.0003
312	0.00015

- c. Exhaust from the new cartridge dust collectors associated with Source IDs 201, 202, 301, 303, 305, 307, and 309 shall be vented inside a building. [PCC 17.12.190.B]

2. Air Pollution Control Requirements

[Material Permit Conditions are indicated by underline and italics]

- a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the secondary and tertiary crushing circuits and the associated cartridge dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.
[40 CFR 60.11 (d), PCC 17.12.190.B & 17.12.350.A.3.e]
- b. The Permittee shall maintain and operate ancillary pollution control devices including spray bars, duct work and hoods used to capture particulate matter emissions, to meet the emission standards in Conditions III.B and VI.B.1.

[PCC 17.12.180.A.2 & 17.12.350.A.3.e]

3. Monitoring, Recordkeeping, and Reporting

[PCC 17.12.180.A.3, 4 & 5]

a. Monthly Emission Rate Calculations

In order to complete the calculations required by Condition II.K.1, the Permittee shall compute the monthly emission rate for each emission unit listed in Section IV of Attachment "C".

- i. Each day of operation, the Permittee shall measure and record the material throughput for the following emission units:

Source ID 201, #1 Secondary Crushing Line
Source ID 202, #2 Secondary Crushing Line
Source ID 203, #3 Secondary Crushing Line
Source ID 204, #4 Secondary Crushing Line
Source ID 301, #1 Tertiary Crushing Line
Source ID 302, #2 Tertiary Crushing Line
Source ID 303, #3 Tertiary Crushing Line
Source ID 304, #4 Tertiary Crushing Line
Source ID 305, #5 Tertiary Crushing Line
Source ID 306, #6 Tertiary Crushing Line
Source ID 307, #7 Tertiary Crushing Line
Source ID 308, #8 Tertiary Crushing Line
Source ID 309, #9 Tertiary Crushing Line
Source ID 310, #10 Tertiary Crushing Line
Source ID 311, Conveyor Transfer points
Source ID 312, Fine Ore Transfer Building

- ii. The Permittee shall use the daily material throughput data to compute the total amount of material processed in each month for each of the emission units listed above.

iii. The Permittee shall calculate monthly PM and PM₁₀ emissions from each emission unit using the following procedure.

- (1) The Permittee shall compute the pounds of PM and PM₁₀ emitted from each emission unit during each month as the product of the material throughput for the month (Condition VI.B.3.a.ii.(2) expressed in tons) and the emission factor determined using the procedure of Condition VI.B.4.d (expressed as pound of PM and PM₁₀ emitted per ton of material throughput). If more than one emission factor has been determined since issuance of this permit, the Permittee shall use the average of all such emission factors. If a source-specific emission factor has not yet been determined, the Permittee shall assume that the emission factor is equal to the applicable limit shown in Condition VI.B.1.b.
- (2) The Permittee shall convert the pounds of PM and PM₁₀ emitted per month to tons of PM and PM₁₀ emitted per month.

b. The Permittee shall comply with the monitoring, recordkeeping, and reporting requirements of this permit, including Conditions II.H.1 through II.H.6, II.H.7.a or b (as applicable), II.I, and III.C, for each piece of process and control equipment.

[PCC 17.12.180.A.3.b]

4. Performance Testing Requirements

[PCC 17.12.180.A.3.c & PCC 17.12.050]

- a. For each Fine Ore Crushing Operation control device, the Permittee shall conduct PM performance tests in order to determine the pounds of PM emitted per hour, the grams emitted per dry standard cubic meter, and the control device emission factor (pounds of PM emitted per ton of material processed). The results of the test shall be used to determine whether the Permittee is in compliance with Conditions III.B.1 and VI.B.1. Tests shall be conducted according to the following schedule:

Emission Unit	Required Testing Frequency
Source ID 203 and 204 Secondary Crushing Operations	Once per permit term.
Source ID 302, 304, 306, 308, and 310, Tertiary Crushing Operations	Once per permit term on at least one control device in this section on a rotating basis.
Source ID 312, Fine Ore Transfer Building	Once per permit term.
Source ID 311, Conveyor transfer points	Once per permit term.

- b. These performance tests required shall be conducted in accordance with Reference Method 5 or 17 in 40 CFR 60, Appendix A and the specifications included in Condition III.D.

[PCC 17.12.180.A.3.c & 17.12.050]

- c. During each performance test, the Permittee shall monitor and record the material throughput to the associated process. The Permittee shall record the total throughput for each test run and the average hourly throughput for the three test runs.

- d. The Permittee shall determine the emission factor (pounds PM emitted per ton of material processed) for each emission unit by dividing the pound-per-hour PM emission rate for the emission unit determined in accordance with Condition VI.B.4.a by the average hourly material throughput for the associated emission unit(s) (tons material throughput per hour) determined according to Condition VI.B.4.c. The Permittee shall also determine the average emission factor for each emission unit by computing the average of all emission factors determined since issuance of this permit.
- e. The Permittee shall keep a record of each emission factor and the average emission factor and shall include it in the test report required by Attachment "A", Condition XVIII.G. [
- f. The average emission factor (or the emission factor if only a single factor is available) determined according to Condition VI.B.4.d shall be used to compute the monthly PM and PM₁₀ emission rate according to the procedure of Condition VI.B.3.a.
- g. If the PM emission rate (grams per dry standard cubic meter) exceeds the limit of Condition III.B.1, the Permittee shall report the excess emission in accordance with Attachment "A", Condition XII. If the PM emission factor (not the average emission factor) determined during the test for the emission unit exceeds the applicable limit of Condition VI.B.1.b, then the Permittee shall report the excess emission in accordance with Attachment "A", Condition XII.
- h. **Optional PM₁₀ Testing**
The Permittee may conduct PM₁₀ emission testing according to the EPA Reference Method 201A in order to develop a unit-specific PM₁₀ emission factor for use in computing the unit-specific and facility-wide PM₁₀ emission rates in accordance with Conditions II.K and VI.B.3.a. If a PM₁₀ emission test is not conducted, the Permittee shall assume that the PM₁₀ emission rate is equal to the PM emission rate.
- i. **Visible Emissions**
During the PM performance test required by Condition VI.B.4.a, the Permittee shall conduct one six-minute Method 9 performance test on the emission unit to measure the opacity of non-fugitive emissions subject to the opacity limitations of Condition III.B.2. Any exceedance of the applicable opacity limitation shall be reported as an excess emission in accordance with Attachment "A", Condition XII.

5. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this section shall be deemed compliance with 40 CFR 60.382(a)(1), (a)(2), and (b), for the equipment subject to this section.

VII. SPECIFIC REQUIREMENTS FOR FINE ORE STORAGE AND HANDLING EQUIPMENT SUBJECT TO NSPS 40 CFR 60 SUBPART LL

A. Applicability

This condition is applicable to the equipment listed under Section V of Attachment “C”, as being subject to NSPS.

B. Particulate Matter (PM/PM₁₀) and Opacity

1. Emission Limitations/Standards

- a. For Fine Ore Storage and Handling equipment that is subject to NSPS as indicated in Section V of Attachment “C”, Table C-1 (Source IDs 009 through 017), the Permittee shall not cause to be discharged into the atmosphere emissions in excess of the limitations shown in Condition III.B. [40 CFR 60.382(a)(1), (a)(2) & (b)]

- b. The Permittee shall not cause to be discharged into the atmosphere emissions that contain PM or PM₁₀ in excess of the following:

[PCC 17.12.190.B, & 17.12.350.A.3.c]

[Material Permit Conditions are indicated by underline and italics]

Source ID	Emission Factor Limitation (Pounds of PM or PM ₁₀ per Ton of Material Throughput)
<u>009</u>	<u>0.0001</u>
<u>010-017</u>	<u>0.00025</u>

2. Air Pollution Control Requirements

[Material Permit Conditions are indicated by underline and italics]

- a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the fine ore storage and handling equipment listed in Section V of Attachment “C” and the associated cartridge dust collectors in a manner consistent with good air pollution control practice for minimizing particulate matter emissions. [40 CFR 60.11(d), PCC 17.12.180.A.2 & PCC 17.12.350.A.3.e]

- b. The Permittee shall maintain and operate all ancillary pollution control devices including spray bars, duct work and hoods used to capture particulate matter emissions in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

[PCC 17.12.180.A.2 & 17.12.350.A.3.e]

3. Monitoring, Recordkeeping, and Reporting

[PCC 17.12.180.A.3, A.4 & A.5]

- a. Monthly Emission Rate Calculations

To complete the calculations required by Condition II.K.1, the Permittee shall compute the monthly emission rate for Source IDs 009-017 listed in Section V of Attachment “C”, Table C-1 using throughput, emission factor.

- i. **Material Throughput Recordkeeping**
The Permittee shall monitor and record the daily material throughput for Source IDs 009-017 listed in Section V of Attachment “C”, Table C-1 and shall sum the daily material throughput data to compute the total material throughput for each month.
- ii. The Permittee shall calculate monthly PM and PM₁₀ emissions from Source IDs 009-017 listed in Section V of Attachment “C”, using the following procedure:
 - (1) If a unit-specific emission factor has been developed through performance testing, the Permittee shall calculate the monthly controlled PM and PM₁₀ emission rate using the unit-specific emission factor (Condition VII.B.4.a) and the monthly material throughput (Condition VII.B.3.a.i). If more than one emission factor has been determined since issuance of this permit, the Permittee shall use the average of all such emission factors.
 - (2) If a unit-specific emission factor has not been developed, the Permittee shall compute the pounds of PM and PM₁₀ emitted from each emission unit during each month as the product of the material throughput for the month (Condition VII.B.3.a.i expressed in tons) and the associated emission limit from Condition VII.B.1.b.
 - (3) The Permittee shall convert the pounds of PM and PM₁₀ emitted per month to tons of PM and PM₁₀ emitted per month.
- b. The Permittee shall comply with the additional monitoring, recordkeeping, and reporting requirements of this permit including the following: [PCC 17.12.180.A.3.b]
 - i. For Source IDs 009 through 017, the Permittee shall comply with the monitoring, recordkeeping, and reporting requirements of Condition III.
 - ii. For Source IDs 009 through 017, the Permittee shall comply with Conditions II.H.1 through II.H.6, II.H.7.b (Cartridge Dust Collectors), and II.I.

4. Performance Testing Requirements [PCC 17.12.180.A.3.c & PCC 17.12.050]

- a. For each Fine Ore Storage and Handling emission unit, the Permittee shall conduct PM performance tests in order to determine the pounds of PM emitted per hour and the grams emitted per dry standard cubic meter. For Source IDs 009-017, the Permittee shall also determine the unit-specific emission factor (pounds of PM emitted per ton of material processed). The results of the test shall be used to determine whether the Permittee is in compliance with Conditions VII.B.1 (unit-specific limits) and III.B.1 (NSPS emission limits). Tests shall be conducted according to the following schedule:

Emission Unit	Required Testing Frequency
Source ID 009-017, Fine Ore Bins	Once per permit term on at least one control device in this section on a rotating basis.

- b. The performance tests required for Source IDs 009 through 017, shall be conducted in accordance with Reference Method 5 or 17 in 40 CFR 60, Appendix A and the specifications included in Condition III.D.

c. Source-Specific Emission Factor Determination:

For Source IDs 009-017, the Permittee shall develop a unit-specific PM emission factor for use in emission calculations as follows:

- i. Monitor and record the material throughput to the associated emission unit during each test run.
 - ii. Record the total material throughput for each test run and the average hourly throughput for the three test runs.
 - iii. Determine the emission factor (pounds PM emitted per ton of material processed) for the emission unit by dividing the pound-per-hour PM emission rate determined in accordance with Condition VII.B.4.a by the average hourly material throughput for the associated emission units(s) (tons material throughput per hour) determined according to Condition VII.B.4.c.ii. The Permittee shall also determine the average emission factor for each emission unit by computing the average of all emission factors determined since issuance of this permit.
 - iv. The Permittee shall keep a record of each emission factor and average emission factor and shall include such information in the test report required by Attachment "A", Condition XVIII.G. [PCC 17.12.050]
 - v. The average emission factor (or the emission factor if only a single factor is available) determined according to Conditions VII.B.4.c.iii shall be used to compute the monthly PM and PM₁₀ emission rate according to the procedure of Condition VII.B.3.a.
- d. If the PM emission rate (grams per dry standard cubic meter) exceeds the applicable limit of Conditions III.B, the Permittee shall report the excess emission in accordance with the general conditions of this permit.
- e. Optional PM₁₀ Testing

The Permittee may conduct PM₁₀ emission testing according to EPA Reference Method 201A in order to develop a unit-specific PM₁₀ emission factor for use in computing the unit-specific and facility-wide PM₁₀ emission rates in accordance with Condition II.K. If a PM₁₀ emission test is not conducted, the Permittee shall assume that the PM₁₀ emission rate is equal to the PM emission rate.

f. Visible Emissions

During each PM performance test required by Condition VII.B.4, the Permittee shall conduct one six-minute Method 9 performance test on the emission unit to measure the opacity of non-fugitive emissions subject to the opacity limitations of Condition III.B.

5. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this section shall be deemed compliance with 40 CFR 60.382(a)(1), (a)(2), and (b) for the equipment subject to this section.

VIII. SPECIFIC REQUIREMENTS FOR FINE ORE STORAGE AND HANDLING EQUIPMENT NOT SUBJECT TO NSPS 40 CFR 60 SUBPART LL

A. Applicability

This Section is applicable to the equipment listed under Section V of Attachment “C”, as not subject to NSPS.

B. Particulate Matter (PM/PM₁₀) and Opacity

1. Emission Limitations/Standards

- a. For Source IDs 018 through 033, and 063, the Permittee shall not cause to be discharged into the atmosphere emissions in excess of the limitations shown in Condition IV.B.
[PCC 17.16.130.B, & C & PCC 17.16.360.B]
- b. The Permittee shall not cause to be discharged into the atmosphere from all combined Source IDs 018-033 emissions that contain PM or PM₁₀ in excess of 0.0019 pounds of PM or PM₁₀ per ton of material throughput. [PCC 17.12.190.B & 17.12.350.A.3.a]
[Material Permit Conditions are indicated by underline and italics]

2. Air Pollution Control Requirements

- a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the fine ore storage and handling equipment listed in Section V of Attachment “C” and the associated wet scrubbers, in a manner consistent with good air pollution control practice for minimizing particulate matter emissions. [PCC 17.12.180.A.2 & 17.12.350.A.3.e]
[Material Permit Conditions are indicated by underline and italics]
- b. The Permittee shall maintain and operate all ancillary pollution control devices including spray bars, duct work and hoods used to capture particulate matter emissions, to meet the emission standards in Conditions IV.B and VIII.B.1. [PCC 17.12.180.A.2 & 17.12.350.A.3.e]
[Material Permit Conditions are indicated by underline and italics]

3. Monitoring, Recordkeeping, and Reporting

- a. Monthly Emission Rate Calculations
In order to determine whether the Permittee is in compliance with Condition II.K.1, the Permittee shall compute the monthly emission rate for each process listed in Section V of Attachment “C”, Table C-1 using throughput and emission factor data.
- i. Material Throughput Recordkeeping
The Permittee shall monitor and record the daily material throughput for emission units 018-033, and 063 listed in Section V of Attachment “C” and shall sum the daily material throughput data to compute the total material throughput for each month.

- ii. The Permittee shall calculate monthly PM and PM₁₀ emissions from each emission unit (018-033, and 063) listed in Section V of Attachment “C” using the following procedure:
- (1) If a unit-specific emission factor has been developed through performance testing, the Permittee shall calculate the monthly controlled PM and PM₁₀ emission rate using the unit-specific emission factor (Condition VIII.B.4.a) and the monthly material throughput (Condition VIII.B.3.a.i). If more than one emission factor has been determined since issuance of this permit, the Permittee shall use the average of all such emission factors. [PCC 17.12.180.A.3]
 - (2) If a unit-specific emission factor has not been developed for Source IDs 018-033, the Permittee shall compute the pounds of PM and PM₁₀ emitted from each emission unit during each month as the product of the material throughput for the month (Condition VIII.B.3.a.i expressed in tons) and the associated emission limit from Condition VIII.B.1.b. [PCC 17.12.180.A.3]
 - (3) If a unit-specific emission factor has not been developed for Source ID 063, the Permittee shall compute the monthly controlled PM emission rates from Source ID 063 as the product of the material throughput for the month (Condition VIII.B.3.a.i expressed in tons) and the emission factor of 0.0048 pounds of PM per ton of material processed (from USEPA Publication Number AP-42, “Compilation of Air Pollutant Emission Factors”). For this calculation, the PM₁₀ emission rate shall be assumed to equal the PM emission rate unless otherwise demonstrated through performance testing.
 - (4) The Permittee shall convert the pounds of PM and PM₁₀ emitted per month to tons of PM and PM₁₀ emitted per month. [PCC 17.12.180.A.2]
 - a. The Permittee shall comply with the additional monitoring, recordkeeping, and reporting requirements of this permit including the following: [PCC 17.12.180.A.3.c]
 - i. For Source IDs 018 through 033, and 063, the Permittee shall comply with the monitoring, recordkeeping, and reporting requirements of Condition IV.
 - ii. For non-fugitive emissions from Source IDs 018 through 033 and 063, the Permittee shall comply with Conditions II.I.
 - iii. For Source ID 063, the Permittee shall develop and submit an operation and maintenance plan that describes the acceptable ranges of pressure differential and liquid flowrate necessary to meet the applicable emission limits. The ranges are to be based on performance test data, manufacturer specifications, or engineering calculations. The plan shall be submitted within 180 days following permit issuance.
 - iv. The Permittee shall measure and record the scrubber liquid flow rate and pressure differential for Source ID 063 during each day of operation.

4. Performance Testing Requirements

- a. For each Fine Ore Storage and Handling emission unit, the Permittee shall conduct PM performance tests in order to determine the pounds of PM emitted per hour and the grams emitted per dry standard cubic meter. For Source IDs 063 and 018-033, the Permittee shall also determine the unit-specific emission factor (pounds of PM emitted per ton of material processed). The results of the test shall be used to determine whether the Permittee is in compliance with Conditions VIII.B.1 (unit-specific limits) and IV.B (non-NSPS emission limits) as applicable. Tests shall be conducted according to the following schedule: [PCC 17.12.180.A.3.c & PCC 17.12.050]

Emission Unit	Required Testing Frequency
Source IDs 018 through 033 (Wet Scrubber #0 to #15) Mill Feed Belt System	One per year, with a total of five control devices tested from this section during the permit term.
Source ID 063, Lime handling	Once every permit term

- b. The performance tests required for Source IDs 018 through 033 shall be conducted in accordance with Condition IV.B.3. [PCC 17.12.180.A.3.c & PCC 17.12.050]
- c. Source-Specific Emission Factor Determination:

For Source IDs 063 and 018-033, the Permittee shall develop a unit-specific PM emission factor for use in emission calculations as follows:

- i. Monitor and record the material throughput to the associated emission unit during each test run. [PCC 17.12.180.A.3.c]
- ii. Record the total material throughput for each test run and the average hourly throughput for the three test runs. [PCC 17.12.180.A.3.c]
- iii. Determine the emission factor (pounds PM emitted per ton of material processed) for the emission unit by dividing the pound-per-hour PM emission rate determined in accordance with Condition VIII.B.4.a by the average hourly material throughput for the associated emission units(s) (tons material throughput per hour) determined according to Condition VIII.B.4.c.ii. The Permittee shall also compute the average emission factor for the unit using all emission factors determined since issuance of this permit. [PCC 17.12.180.A.3.c]
- iv. Determine the combined emission factor for source IDs 018-033 (pounds PM emitted per ton of material processed) by computing the average emission factor for all units tested since permit issuance. For units in this grouping (018-033) which have been tested more than once, the Permittee shall use the most recent test results to compute the average emission factor. For Source IDs 018-033, the average emission factor shall be used in the monthly PM emission rate calculations.
- v. The Permittee shall keep a record of each emission factor, and average emission factor and shall include the information in the test report required by Attachment "A", Condition XVIII.G. [PCC 17.12.050]

vi. The average emission factor (or the emission factor if only one test has been conducted) determined according to Conditions VIII.B.4.a shall be used to compute the monthly PM and PM₁₀ emission rate according to the procedure of Condition VIII.B.3.a. [PCC 17.12.180.A.3.c & PCC 17.12.050]

e. Any exceedance of the PM emission rate (grams per dry standard cubic meter) in Condition IV.B shall be reported as an excess emission. Any exceedance of the emission factor (combined emission factor for Source IDs 018-033) for the unit (pounds PM emitted per ton of material throughput) in Condition VIII.B.1 shall be reported as an excess emission. [PCC 17.12.180.A.5.b, PCC 17.12.040.A & .B]

f. Optional PM₁₀ Testing [PCC 17.12.180.A.3]

The Permittee may conduct PM₁₀ emission testing according to EPA Reference Method 201A in order to develop a unit-specific PM₁₀ emission factor for use in computing the facility-wide PM₁₀ monthly and 12-month rolling totals in accordance with Condition II.K.2.a. If a PM₁₀ emission test is not conducted, the Permittee shall assume that the PM₁₀ emission rate is equal to the PM emission rate.

g. Visible Emissions

During each PM performance test required by Condition VIII.B.4, the Permittee shall conduct one six-minute Method 9 performance test on the emission unit to measure the opacity of non-fugitive emissions subject to the opacity limitations of Condition IV.B. Any exceedance of the applicable opacity limitation shall be reported as an excess emission. [PCC 17.12.050]

5. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this section shall be deemed compliance with PCC 17.16.130.B and C & PCC 17.16.360 for the equipment subject to this section.

IX. SPECIFIC REQUIREMENTS FOR THE MOLYBDENUM PLANT

A. Applicability

This condition applies to all equipment under Section VI of Attachment "C".

B. Particulate Matter and Opacity

1. Emission Limitations/Standards

a. The Permittee shall not cause to be discharged into the atmosphere from the Molybdenum Plant (Source IDs 117, 118, 119, 041, 042, 044, 044A, 045, 048, 053, 054, 058, and 059) PM emissions in excess of the limits included in Condition IV.B. [PCC 17.16.130.B and .C & 17.16.360(B)]

b. *The Permittee shall not cause to be discharged into the atmosphere from the Molybdenum Roaster (Source ID 058) emissions in excess of 7.0 pounds of PM or PM₁₀ per hour.*

[PCC 17.12.190.B and 17.12.350.A.3.a]

[Material Permit Conditions are indicated by underline and italics]

2. Air Pollution Control Requirements

[Material Permit Conditions are indicated by underline and italics]

- a. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall maintain and operate the molybdenum plant and the associated cartridge dust collector, wet scrubbers, baghouses, cyclones, mist eliminators, and electrostatic precipitators in a manner consistent with good air pollution control practices for minimizing particulate matter emissions.*

[PCC 17.12.180.A.2 & 17.12.350.A.3.e]

- b. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate ancillary control devices including spray bars, duct work and hoods in a manner consistent with good air pollution control practices for minimizing particulate matter emissions.*

[PCC 17.12.180.A.2 & 17.12.350.A.3.e]

c. Specific Air Pollution Control System Requirements for Molybdenum Roasting

- i. *Roof mode operation is prohibited. Roof mode means to vent roaster off-gas directly to the atmosphere through stacks in the roof of each roaster*

[PCC 17.12.180.A.2, 17.12.350.A.3.a & e]

- ii. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate one or more molybdenum roasting pollution control trains consisting of a cyclone, an electrostatic precipitator, a wet scrubber, and a mist eliminator in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.. A molybdenum roasting pollution control train bypass is defined as an instance in which roaster off-gas fails to pass through a pollution control train (i.e., a cyclone, an electrostatic precipitator, a wet scrubber, and a mist eliminator) until that roaster has ceased operating (for purposes of this permit condition only, a roaster has "ceased operating" when at least 24 consecutive hours have elapsed since any feed has entered that roaster).*

[PCC 17.12.180.A.2, 17.12.350.A.3.a, & e]

- iii. *The Permittee shall not use the molybdenum roaster maintenance stack to vent roaster off-gas to the atmosphere. Any ducting to the molybdenum roaster maintenance stack shall be disconnected, thereby eliminating the possibility of routing roaster off-gas to the atmosphere through the maintenance stack.*

[PCC 17.12.180.A.2, 17.12.350.A.3.a, & e]

3. Monitoring, Recordkeeping and Reporting Requirements

- a. Compliance with particulate matter standards shall be determined as follows:

- i. Conducting a PM and/or PM₁₀ performance test on the emission unit in accordance with the test methods and procedures of Attachment "A", Section XVIII and Condition IX.B.4, Performance Testing Requirement in order to determine whether the Permittee complies with Condition IX.B.1. [PCC 17.12.050.G]

- ii. In order to determine compliance with Condition IX.B.1.a, any credible evidence or information relevant to whether a molybdenum roaster would have been in compliance with the particulate matter standard if the performance test referred to above had been performed may be used.

[PCC 17.12.050.I]

b. The following procedures shall be used to compute the monthly PM and PM₁₀ emission rate for each emission unit at the Molybdenum Plant. These monthly emission rates shall be used to complete the calculations required by Condition II.K.2.

i. Material Throughput Recordkeeping

The Permittee shall monitor and record the daily material throughput for each emission unit listed in Section VI of Attachment “C”. [PCC 17.12.180.A.3.c & 17.12.180.A.4.a]

ii. Emission Calculations [PCC 17.12.180.A.3.c & 17.12.180.A.4.a]

The Permittee shall calculate monthly PM and PM₁₀ emissions from each emission unit listed in Section VI of Attachment “C” using the following procedure:

- (1) The Permittee shall calculate the monthly controlled emission rate from each emission unit listed in Attachment “C”, Section VI as the product of the material throughput for the month (Condition IX.B.3.b.i expressed in tons) and the appropriate unit-specific emission factor (pounds of PM or PM₁₀ per ton of material throughput) developed through performance testing (Condition IX.B.4). If more than one emission factor has been determined since issuance of this permit, the Permittee shall use the average of all such emission factors.
- (2) For emission units which have not undergone performance testing to determine a unit-specific emission factor, the Permittee shall calculate the monthly controlled emission rate using the associated emission factor from the table below:

Source ID	Emission Factor
041	0.76 pounds of PM or PM ₁₀ per hour
042	0.001 pounds of PM per ton of material processed
044A	0.0001 pounds of PM per ton of material processed
048	0.31 pounds of PM per hour
053	0.78 pounds of PM per hour
054	0.78 pounds of PM per hour
058	7.0 pounds of PM or PM ₁₀ per hour
059	0.0012 pounds of PM or PM ₁₀ per ton of material processed

c. General Monitoring, Recordkeeping, and Reporting Requirements

- i. The Permittee shall comply with the Compliance Assurance Monitoring Requirements of Conditions II.H.1 through II.H.6 for the wet scrubbers of Source IDs 053 and 054, and the Electrostatic precipitators of Source ID 058. [PCC 17.12.180.A.3.b]
- ii. For the wet scrubbers of Source IDs 053 and 054, the Permittee shall comply with the Compliance Assurance Monitoring Plan included in Condition II.H.7.a. [PCC 17.12.180.A.3.b]

- iii. For the electrostatic precipitators of Source ID 058, the Permittee shall comply with the Compliance Assurance Monitoring Plan included in Condition II.H.7.c. [PCC 17.12.180.A.3.b]
- iv. The Permittee shall comply with the Non-NSPS monitoring, recordkeeping, and reporting requirements of Condition IV.B for all emission units at the Molybdenum Plant. For non-fugitive particulate matter emission units at the Molybdenum Plant, the Permittee shall comply with the opacity monitoring requirements of Condition II.I. [PCC 17.12.180.A.3, A.4 & A.5]
- v. Permittee shall report all molybdenum roasting pollution control train bypass events as part of the report of monitoring activities required by Attachment B, Section II.B. Permittee shall include the date of the event, a description of the event, and whether the event resulted in excess emissions.

4. Performance Testing Requirements [PCC 17.12.180.A.3.c & PCC 17.12.050]

- a. The Permittee shall conduct performance testing as described in the following table. For Source ID 041, 53, 54, and 058, testing shall be conducted to determine the pounds of PM and PM₁₀ (filterable and condensable) emitted per hour and the unit-specific PM and PM₁₀ emission factor (pounds emitted per ton of material throughput). For all other sources listed in the table below, testing shall be conducted to determine the pounds of PM emitted per hour and the unit-specific emission factor. The tests shall be conducted in accordance with the following schedule:

Emission Unit	Performance Testing Frequency
Source ID 058, Main Roasting	Biannual – to be completed in 2 nd and 4 th year of the permit term.
Source ID 041, Molybdenum plant – unleached molybdenum sulfide dryers	Once per permit term.
Source ID 042, Leached & Unleached Molybdenum Sulfide Storage, Screening, and Handling	Once per permit term.
Source ID 044A, Molybdenum Sulfide Dump Hopper Baghouse	Once per permit term.
Source IDs 053 and 054, Molybdenum plant leach dryers	Once per permit term.
Source ID 048, Molybdenum oxide storage screening and handling	Once per permit term.
Source ID 059, Molybdenum packaging and handling system, cannery	Once per permit term.

[PCC 17.12.180.A.3.c & PCC 17.12.050]

b. Unit-Specific Emission Factor Determination:

The following procedures shall be used in developing these unit-specific emission factors:

- i. Determine the emission factor (pounds PM/PM₁₀ emitted per ton of material processed) for emission unit by dividing the pound-per-hour PM/PM₁₀ emission rate determined using the results of the performance test by the average hourly material throughput for the associated emission unit (tons material throughput per hour) determined according to Condition IX.B.4.c.i. If more than one test has been conducted since issuance of this permit, the Permittee shall also compute the average emission factor for the emission unit using all emission factor data collected since issuance of this permit. [PCC 17.12.050]
- ii. The Permittee shall keep a record of each emission factor and average emission factor and shall include it in the test report required by Attachment "A", Condition XVIII.G. [PCC 17.12.050]
- iii. The average emission factor (or emission factor if only one test has been conducted) calculated according to this permit condition shall be used to compute the monthly PM and PM₁₀ emission rate according to the procedure of Condition IX.B.3.b. [PCC 17.12.190 & 17.12.050]

5. Permit Shield [PCC 17.12.310]

Compliance with conditions of this permit condition shall be deemed compliance with Arizona SIP Rule R9-3-521(A), A.A.C. R18-2-702(B) & (C), PCC 17.16.360(B) & (H), and Pima County Code 17.16.360(B) for the equipment subject to Condition IX.

C. Sulfur Dioxide and Reduced Sulfur

1. Emission Limitations/Standards

- a. Sulfur Dioxide [PCC 17.12.190.B & 17.12.350.A.3.a]

The Permittee shall not cause to be emitted in to the atmosphere from the Molybdenum Roaster (Source ID 058) SO₂ emissions in excess of 220 tons per year calculated monthly as a 12-month rolling total.

- b. Reduced Sulfur

The Permittee shall not cause, allow or permit 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. Reduced sulfur includes sulfur equivalent from all sulfur emissions including sulfur dioxide, sulfur trioxide, and sulfuric acid. [PCC 17.16.360.E]

2. Air Pollution Control Requirements

[Material Permit Conditions are indicated by underline and italics]

- a. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall maintain and operate the molybdenum plant and the associated lime slurry scrubbers (Source ID 058) in a manner consistent with good air pollution control practices for minimizing SO₂ and reduced sulfur emissions.* [PCC 17.12.180.A.2 & 17.12.350.A.3.e]

- b. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate molybdenum plant duct work and hoods in a manner consistent with good air pollution control practices for minimizing SO₂ and reduced sulfur emissions. [PCC 17.12.180.A.2 & 17.12.350.A.3.e]

3. Monitoring, Recordkeeping and Reporting Requirements

[PCC 17.12.180.A.3.a, c, d, & 17.16.360.G]

- a. The Permittee shall calculate SO₂ mass emissions in units of tons per month and tons per rolling 12-month period using data from the Continuous Emission Monitoring System (CEMS). Any 12-month period during which total SO₂ emission exceeds the limit of Condition IX.C.1 is an exceedance of such limit that shall be reported in accordance with Condition XII of Attachment “A”.
- b. With the exception of the molybdenum roaster operating condition referred to in Condition IX.C.3.c below, the reduced sulfur standard in Condition IX.C.1.b above applies to each individual molybdenum roaster separately (i.e., the Permittee shall not discharge into the atmosphere from No. 1 Molybdenum Roaster reduced sulfur in excess of ten percent of the sulfur entering No. 1 Molybdenum Roaster as feed, and the Permittee shall not discharge into the atmosphere from No. 2 Molybdenum Roaster reduced sulfur in excess of ten percent of the sulfur entering No. 2 Molybdenum Roaster as feed).
- c. If, during any period, all of the off-gas from one molybdenum roaster combines with all of the off-gas from the other molybdenum roaster before being released into the atmosphere through the main stack, then the reduced sulfur standard in Condition IX.C.1.b applies to the molybdenum roasters jointly for that period only (i.e., the Permittee shall not discharge into the atmosphere from Nos. 1 and 2 Molybdenum Roasters through the main stack reduced sulfur in excess of ten percent of the sulfur entering Nos. 1 and 2 Molybdenum Roasters as feed).
- d. Compliance with the reduced sulfur and SO₂ standard in Condition IX.C.1.b shall be determined by:
- i. Conducting a performance test on the molybdenum roaster(s) in accordance with the test methods and procedures of Attachment “A”, Condition XVIII and Condition IX.C.4, Performance Testing Requirements; or
 - ii. Continuous emissions monitoring, as set forth in Condition IX.C.3.h, Continuous Emission Monitoring System Requirements for SO₂; or
 - iii. Any credible evidence or information relevant to whether a molybdenum roaster would have been in compliance with the reduced sulfur standard if the performance test had been performed.

- e. Using the procedures of Conditions IX.C.3.f and g, the Permittee shall determine compliance with the reduced sulfur standard in Condition IX.C.1.b for each hour of roaster operations (i.e., each hour in which roasting off-gas is routed to the main stack from any roaster), in accordance with the following equations:

$$\text{SO}_2 \text{ percent removed} = 100 \times [1 - \{ \text{SO}_2 \text{ Mass Emission Determination} / \text{SO}_2 \text{ Generation Determination} \}]$$

$$\text{hr} = 3$$

$$\text{Where: SO}_2 \text{ Mass Emission Determination} = [\sum (\text{SO}_2)_i] / 3$$

$$i = \text{hr}1$$

Where $(\text{SO}_2)_i$ = mass emissions for hour i (calculated using the CEMS data) and at least three hours have elapsed since startup of roaster operations (for the purposes of this and the following equation only, startup of roaster operations occurs immediately upon resumption of feed after there has been at least eleven consecutive hours when no feed has entered the roaster).

$$\text{hr} = x$$

$$\text{SO}_2 \text{ Generation Determination} = [\sum (\text{SO}_2)_j] / x$$

$$j = \text{hr}1$$

Where: x = hours of operation since startup of roaster operation and
 $x \leq 12$ hours

$$(\text{SO}_2)_j = S_{\text{input}} \times 2000 \text{ pounds per ton} \times 2 \text{ pounds SO}_2 \text{ per pound S}$$

$$\text{Where: } S_{\text{input}} = F_{\text{tph}} \times (1 - F_{\text{H}_2\text{O}}) \times S_{\text{percent}}$$

F_{tph} = concentrate feed to roaster in tons per hour;

$F_{\text{H}_2\text{O}}$ = percent moisture in concentrate feed to roaster;

S_{percent} = percent sulfur in concentrate feed to roaster.

An SO_2 percent removed value from the above equation that is less than 90 percent shall constitute a violation of the reduced sulfur standard in and shall be reported as excess emissions according to Attachment "A", Condition XII and as part of the CEMS Excess Emissions and Monitoring System Performance Report in Attachment "D". The Permittee shall use all valid measurements or data points collected to calculate both the SO_2 Generation Determinations and the SO_2 Mass Emissions Determinations.

f. SO₂ Generation Determination

i. 24-Hour Composite Sampling Percent Sulfur in Feed Determination

- (1) Each day the roaster is operating, beginning at approximately 6:00 A.M. and ending between 4:00 A.M. and 6:00 A.M. the following day (the “24-Hour Composite Sampling Period”), the Permittee shall collect one roaster feed sample during each consecutive two-hour period (for a total of 12 samples collected for each 24-Hour Composite Sampling Period) from the discharge of the load cell feed bin that is currently feeding the roaster. If there is no roaster feed at 6:00 A.M., sample collection shall begin no later than two hours after feed begins and continue during each two-hour period remaining in the 24-Hour Composite Sampling Period. Although the Permittee is required to collect one valid roaster feed sample for each two-hour period, the Permittee’s failure to do so shall not invalidate any valid samples collected for that same 24-hour period. All collected individual samples, whether one or more shall be used as the 24-hour composite sample. Until the Permittee determines the percent sulfur and percent moisture content in the feed in accordance with the procedures set forth below, or when no valid samples or data exist for a 24-Hour Composite Sampling Period, the Permittee shall substitute, as applicable, 24.6 percent sulfur in feed and 10 percent moisture content in feed for that 24-Hour Composite Sampling Period for the sole purpose of calculating the SO₂ Generation Determination, and, if applicable, complying with the reporting requirements of this permit and Attachment “A”, Condition XII. The use of substitute data neither relieves nor excuses the Permittee from complying with the sample or data collection requirements provided herein.
- (2) The Permittee shall store the samples in a single sealed compositing container.
- (3) Following collection of the last sample of the 24-Hour Composite Sampling Period, the Permittee shall transport the sealed compositing container to a laboratory, where the laboratory shall prepare and analyze the 24-hour composite sample, recording the analysis as percent sulfur in feed on a dry weight basis for the 24-Hour Composite Sampling Period.
- (4) The Permittee shall determine the percent sulfur in feed for each 24-Hour Composite Sampling Period within 72 hours of receipt by the on-site laboratory. If an off-site laboratory is used, the determination shall be made within 10 days of receipt of the sample by the off-site laboratory.
- (5) During multiple roaster operations, the Permittee shall duplicate the above procedures (i.e., the 24-hour composite sampling percent sulfur in feed on a dry weight basis shall be determined individually for each roaster).

ii. 24-Hour Composite Sampling Percent Moisture Content in Feed Determination

- (1) Using a portion of the sample collected for the 24-hour composite sampling percent sulfur in feed determination in step i) above, the Permittee shall determine the moisture content in the feed for the 24-Hour Composite Sampling Period by laboratory analysis. Such analysis shall be recorded as the percent moisture content in feed for that 24-Hour Composite Sampling Period.

- (2) The Permittee shall determine the percent moisture content in feed for each 24-Hour Composite Sampling Period within 72 hours of receipt by an on-site laboratory. If an off-site laboratory is used, the determination shall be made within 10 days of receipt of the sample by the off-site laboratory.

iii. Feed Weight and Hourly Feed Determination

(1) Feed Weight

The Permittee shall perform daily inspections of all load cells associated with the four molybdenum roaster feed weigh bins to ensure that the load cells are operating normally. To ensure feed weigh bin accuracy, the Permittee shall calibrate the load cell system at least once per calendar year using load cell manufacturer's calibration guidelines. If, during annual calibration, a load cell is found not to meet calibration criteria, the Permittee shall undertake corrective action as soon as practicable and verify that the corrective action is successful and that the load weigh bin cells are performing within manufacturer's calibration guidelines. Verification of calibrations and corrective actions shall be performed and documented by a third-party technician, registered with the Arizona Department of Weights and Measures. Documentation shall contain reference to the specific NIST standard used for calibration. The Permittee shall ensure that the feed weigh bin load cells, as well as the associated automated data acquisition and handling systems, are operating and monitoring at all times, except during periods of calibration, quality assurance, preventive maintenance, or repair of these systems. The Permittee shall not disrupt the feed weigh bin load cells or any portion thereof, and thereby avoid performing the monitoring and recording required by this Condition IX.C.3. When the feed weigh bin load cell system is unable to obtain valid measurements of feed to the molybdenum roaster(s), the Permittee shall obtain a valid measurement of feed data by manually calibrating the feed screw speed.

- (2) The Permittee shall weigh all feed entering each roaster using load cell feed bins as described above.

(3) Hourly Feed Determination

During each clock hour, the Permittee shall total and record the feed entering each roaster during the past hour. When no valid data exist for an hourly feed period, the Permittee shall substitute feed data from the average of the most recent valid hourly feed periods previous to and subsequent to the missing data period for the sole purpose of calculating the SO₂ Generation Determination, and, if applicable, reporting excess emissions pursuant to the semiannual CEMS reporting requirements of Condition IX.C.3.h and Attachment "A", Condition XII. This procedure to substitute feed data shall not be used for periods of missing hourly feed values longer than three hours. When no valid data exist for an hourly feed period, but there exists credible evidence that there was no feed, the hourly feed value is deemed to be zero (0) tons per hour. The use of substitute data neither relieves nor excuses the Permittee from complying with the sample or data collection requirements provided herein.

- (4) Upon receipt of the “24-hour Composite Sampling Percent Moisture Content in Feed” determination in Condition IX.C.3.f.ii above, the Permittee shall correct each hourly wet feed value to a dry feed value using the corresponding 24-hour composite sampling percent moisture content in feed determination.

iv. Hourly SO₂ Generation Determination

Upon receipt of the 24-hour composite sampling percent sulfur in feed determination and the hourly feed determination, the Permittee shall input these determinations and the eleven immediately preceding hourly SO₂ Generation Determinations into the equation in Condition IX.C.3.e to determine compliance with the reduced sulfur standard in Condition IX.C.1.

g. SO₂ Mass Emissions Determination

- i. The Permittee shall measure the concentration of SO₂, volumetric flow rate, and stack temperature in off-gas from the roaster operations by a CEMS on the main stack (refer to Condition IX.C.3.h).
- ii. The Permittee shall use data acquired by the CEMS to calculate hourly SO₂ mass emissions. The CEMS shall be operated in accordance with Condition IX.C.3.h. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. All data points required to be collected during an hour shall be, to the extent practicable, evenly spaced over the hour. The Permittee shall calculate hourly SO₂ mass emissions measurements, expressed as pounds SO₂ per hour, by totaling each 15-minute period of CEMS mass emissions data for each hour. When no valid data exist for a 15-minute period, the Permittee shall substitute data from the average of the most recent valid 15-minute periods previous to and subsequent to the missing data period for the sole purpose of calculating the SO₂ Mass Emissions Determination, and, if applicable, reporting excess emissions pursuant to the Semiannual CEMS Reporting Requirement of Condition IX.C.3.h and Attachment “A”, Condition XII. The use of substitute data neither relieves nor excuses the Permittee from complying with the sample or data collection requirements provided herein.
- iii. The Permittee shall input the current and two immediately preceding hourly SO₂ mass emissions measurements from Condition IX.C.3.g.ii, above into the equation in Condition IX.C.3.d to determine compliance with the reduced sulfur standard in Condition IX.B.3.

h. Continuous Emission Monitoring System (CEMS) Requirements for SO₂
[PCC 17.12.060 A.1a & 2; C.1.b; D.1.c, 2, 3.a, 4, 6, 7; E.1, 3, 4, 5, 6 & F.4]

- i. The Permittee shall install, calibrate, maintain, and operate, as well as conduct quality assurance and quality control procedures for, a CEMS on the main stack in accordance with the requirements specified below. The Permittee shall ensure that the CEMS, as well as the associated automated data acquisition and handling systems, are operating and monitoring at all times, except during periods of system breakdown, calibration, zero and span adjustments, quality assurance, preventive maintenance, or repair of these systems, or after 24 hours have elapsed since any feed has entered either roaster. The Permittee shall not disrupt the CEMS or any portion thereof, and thereby avoid performing the monitoring and recording required by Condition IX.C.3.

[PCC 17.16.360.G & 17.12.350.A.3.c]

[Material Permit Conditions are indicated by underline and italics]

- ii. The CEMS shall monitor SO₂, volumetric flow rate, and stack temperature from the outlet of the main stack.
- iii. The output from the SO₂ analyzer, flow monitor, and the temperature sensor shall be transmitted directly to a data acquisition system. The system shall calculate the mass output of SO₂ from the main stack. The system shall be capable of reading all values over the full range of each measurement device. In addition, the data acquisition system shall create a record of all required data for storage, review, and reporting. Data from these monitors shall be used to calculate and record pounds of SO₂ emitted for each 15 minute period.
- iv. The system shall be equipped to provide daily zero and span checks of both the SO₂ monitor and the flow measurement device.
- v. SO₂ emissions shall be monitored using a continuous SO₂ analyzer. The sample shall be drawn from the manifold through the analyzer by a sample pump.
- vi. The velocity shall be measured in actual feet per second. Volumetric flow shall be converted to dry standard cubic feet per minute using the stack diameter, the gas temperature, and any necessary pressure adjustments. Preliminary moisture measurements shall be conducted to determine a moisture correction factor B_{ws}. The flow monitoring system may also require developing a polynomial adjustment coefficient (K factor) so that the flow monitor measurements agree with the reference method. The flow monitor shall be designed and equipped to allow for a daily calibration error test consisting of at least two reference values: 0% to 20% of span or an equivalent reference value (e.g., pressure pulse or electronic signal) and 50% to 70% of span. Flow monitor response, both before and after any adjustment, shall be capable of being recorded by the data acquisition and handling system. The flow monitor shall be designed to allow a daily calibration error test of the entire flow monitoring system, from the outlet of the probe tip through and including the data acquisition and handling system, or the flow monitoring system from and including the transducer through and including the data acquisition and handling system.

vii. Temperature shall be measured using a thermocouple mounted in a thermowell installed near the location of the flow monitor. Temperature data shall be reduced to 1-minute averages, clock basis.

viii. Routine Operation and Calibration

(1) CEMS Daily Checks

The Permittee shall inspect the CEMS each day for the correct flow settings for the sample collection system and the dry air supply. The Permittee shall inspect the sample collection system for proper operation, check calibration gas supply, review daily zero span results, and complete the CEMS log.

(2) SO₂ Analyzer Daily Checks

The Permittee shall inspect the CEMS each day to assess CEMS operation. The assessment shall include checking the daily zero and span of the monitor, reviewing fault alarms, and performing routine maintenance. The CEMS is capable of automatic zero and spans of the SO₂ monitoring system. The low-level calibration standard should be between 0% and 20% of analyzer full scale, and the high-level calibration standard should be between 50% and 70% of analyzer full scale. The absolute difference of the monitor response to the calibration gases must not be greater than 2.5% of the span value of the instrument. If this limit is not met, the Permittee shall perform a manual calibration of the system to verify the results of the automatic calibration. The Permittee shall verify that there is sufficient gas flow, that there are no leaks in the system, and that the correct cylinder concentration was used. If the system checks all show that the analyzer span or zero has drifted, the Permittee shall adjust the analyzer. The Permittee shall record all repairs and adjustments in the CEMS log.

(3) Flow Daily Checks

The Permittee shall log automatic daily checks of the flow monitor zero and span. The Permittee shall perform daily automatic blow back and pluggage checks of the CEMS.

ix. Quality Assurance and Quality Control (QA/QC): SO₂ CEMS Relative Accuracy Test Audit (“RATA”)

(1) At least once per calendar year, but not less than six months after the previous RATA, the Permittee shall conduct a CEMS RATA. The Administrator and the Control Officer shall be notified in writing at least 21 days prior to the initiation of testing.

(2) EPA RM test procedures that shall be implemented to accomplish the RATA are as follows:

RM 2 “Determination of Stack Gas Velocity and Volumetric Flow Rate (Type-S Pitot Tube)”;

RM 4 “Determination of Moisture Content in Stack Gases”; and

RM 6 or 6C “Determination of Sulfur Dioxide Emissions from Stationary Sources” or “Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)”, except that under either RM 6 or 6C each test run shall be 15 minutes and coincide with the CEMS 15-minute data points.

- (3) A minimum of nine acceptable RM tests shall be conducted to demonstrate the accuracy of the CEMS at the stack test location. The RA of the SO₂ monitoring system must be no greater than 20% of the mean value of the RM test data or 10% of the applicable standard, whichever is greater, in terms of pounds SO₂ emitted for each 15 minute period.

x. SO₂ Monitor Daily Calibration

The Permittee shall check the SO₂ monitor calibration drift (“CD”) on a daily basis as follows:

- (1) Calibration of SO₂ monitors shall be conducted daily for the determination of instrument zero and span CD on all instrument ranges.
- (2) For instruments utilizing calibration gas, the calibration gas must be introduced as close to the sampling point as possible.
- (3) The CEMS must be adjusted whenever the zero or span CD exceeds the performance standards.
- (4) The zero drift check must be conducted at a measurement level at or between 0% and 20% of the instrument range. The value selected must be lower than the lowest value that would be expected under normal emission unit operating conditions.
- (5) The span drift check must be conducted at a measurement level at or between 50% and 70% of the instrument range unless an alternative concentration can demonstrate better representation of normal source operating levels.
- (6) If either the zero (or low-level) or high-level CD result exceeds 5.0% of the span value for five, consecutive, daily periods, the CEMS is out-of-control. If either the zero (or low-level) or high-level CD result exceeds 10% of the span value during any CD check, the CEMS is out-of-control. The beginning of the out-of-control period is the time corresponding to the completion of the fifth, consecutive, daily CD check with a CD in excess of two times the allowable limit, or the time corresponding to the completion of the daily CD check that results in a CD in excess of four times the allowable limit. The end of the out-of-control period is the time corresponding to the completion of the CD check following corrective action that results in the CD’s at both the zero and high-level measurement points being within the corresponding allowable CD limit.

- xi. Quarterly Auditing. The Permittee shall comply with the following procedures for quarterly calibration error checks of the SO₂ monitors:
- (1) A Cylinder Gas Audit (“CGA”) or Relative Accuracy Audit (“RAA”) shall be performed once per calendar quarter except the calendar quarter in which an annual RATA is conducted. A CGA or RAA shall be conducted in three consecutive calendar quarters. The fourth calendar quarter audit shall consist of a RATA;
 - (2) A CGA may be conducted in three of four calendar quarters, but no more than three quarters in succession.
 - (3) A CGA shall be conducted by challenging the CEMS with an audit gas of known concentration at two points within the following ranges:
 - (a) The CGA high-level measurement values must be between 50% and 60% of the instrument span;
 - (b) The CGA low-level measurement range must be between 20% and 30% of the instrument range.
 - (4) If the RA determined by the CGA exceeds + 15% of the average audit value or + 5 ppm, whichever is greater, the CEMS is out-of-control.
 - (5) The RAA shall be conducted in the same manner as the RATA, described above, except that only three sets of RM test runs shall be performed.
 - (6) If the RA determined by the RAA exceeds + /-15% of the three-run average or +/- 7.5% of the applicable standard, whichever is greater, the CEMS is out-of-control.
 - (7) The beginning of the out-of-control period is the time corresponding to the completion of the sampling for the CGA or RAA. The end of the out-of-control period is the time corresponding to the completion of the sampling for the subsequent successful audit.

xii. Data Acquisition

(1) Data Validation Criteria

The Permittee shall retain all measurements related to the CEMS for five years. However, emission data obtained during periods when the CEMS is out-of-control shall not be used in the calculation of reported emissions for that period nor be used to determine the total data availability of the reporting period.

- (2) The Permittee shall conduct a RATA each calendar year. Data for the following calendar year shall be considered invalid until a successful RATA is initiated.

xiii. Preventive Maintenance

- (1) To ensure the collection of quality data and reduce instrument downtime, the Permittee shall take corrective action in the following circumstances:
 - (a) Instrument “out-of-control” as determined by the daily zero and span CD checks; and
 - (b) Instrument malfunction as determined during review of daily zero and span CD check information.
- (2) If an instrument problem is detected as described above, the Permittee shall initiate corrective action immediately. If plant personnel observe an analyzer malfunction, a work order shall be initiated. The Permittee shall be responsible for correcting the malfunctioning instrument. In the event that the repair cannot be accomplished by the Permittee’s personnel, the manufacturer or other qualified firm shall be contracted as required to provide on-site or remote remedial repair services, whichever is deemed necessary.
- (3) When the corrective action has been completed, and the analyzer is deemed to be operating properly, appropriate test procedures that document the system’s proper operation shall be implemented and fully documented. This shall be accomplished by repeating the procedure or CD check that was conducted when the malfunction or “out-of-control” condition was initially detected. If the post-maintenance zero or CD checks demonstrate drift in excess of twice the applicable performance specifications, the instrument shall be re-calibrated in accordance with the quarterly calibration error check procedures detailed above. Calibrations may be conducted in-situ.

xiv. Gas Cylinder Certification

The calibration gas standards used for daily calibration, CGAs, RAAs, and RATAs shall be prepared and traceable to EPA Protocol specifications. The calibration gas standards used for all audits (CGA, RAA, and RATA) shall not be used for daily zero and span CD checks.

xv. Semiannual CEMS Report

[PCC 17.12.180.A.4]

- (1) The Permittee shall submit CEMS Reports to the Control Officer and the Administrator semiannually, using the form provided in Attachment “D” (or other form approved by the Control Officer and the Administrator). The semiannual reporting period and submittal deadlines shall coincide with the Compliance Certification requirements of Attachment “A”, Condition VII.

- (2) If (i) the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period, (ii) the total SO₂ Generation Determination (see below) downtime for the reporting period is less than five percent of the total operating time for the reporting period, and (iii) the total CEMS downtime for the reporting period is less than five percent of the total operating time for the reporting period, then only a summary report described below shall be submitted, unless either the Control Officer or the Administrator requests an excess emissions report.
- (3) “SO₂ Generation Determination downtime” means:
- (a) Each two-hour period when there was a failure to collect or retain a valid feed sample,
 - (b) Each 24-hour period when the composite sample was invalid or lost, or when there was a failure to determine the percent sulfur in feed or moisture content in feed, and
 - (c) Each one-hour period when there was a failure to collect or retain valid feed weigh bin data, correct the wet feed value to a dry feed value, or determine the SO₂ generated.
- (4) The summary report shall include all of the following:
- (a) The date and time identifying each period during which
 - (i) less than 12 samples were used for a 24-hour composite sample and the reason(s) for failure to obtain all 12 samples; (ii) the roaster feed weigh bin load cell system was inoperative and the nature of system repairs or adjustments; and (iii) the missing data procedures of Condition IX.C.3.f and/or g were used and the reason(s) for such use.
 - (b) When no excess emissions have occurred; when the CEMS or the feed weigh bin load cells, as well as the associated data acquisition and handling systems, have not been inoperative, repaired, or adjusted; or when the missing data procedures of Condition IX.C.3.f and g have not been used, such information shall be stated in the report.
 - (c) All information needed to complete the report form included in Attachment “D”.

- (5) If (i) the total duration of excess emissions for the reporting period is one percent or greater of the total operating time for the reporting period, (ii) the total SO₂ Generation Determination downtime for the reporting period is five percent or greater of the total operating time for the reporting period, or (iii) the total CEMS downtime for the reporting period is five percent or greater of the total operating time for the reporting period, then the summary report and the CEMS Excess Emissions and Monitoring System Performance Report described in the following section shall both be submitted.
- (6) The CEMS Excess Emissions and Monitoring System Performance Report shall include all of the following:
- (a) The magnitude of excess emissions, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.
 - (b) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the roaster operations, including the nature and cause of any malfunction (if known), the corrective action taken, or the preventative measures adopted.
 - (c) The date and time identifying each period during which the CEMS, including the CEMS data acquisition and handling system, was inoperative, except for zero and span checks; the nature of any CEMS repairs or adjustments; and the pH of the scrubber slurry underflow during such periods.

i. Lime Slurry Scrubber Monitoring (Source ID 058)

[PCC 17.12.180.A.3]

- i. The pH of each scrubber underflow shall be measured four times per operating day. If the pH of the scrubber underflow is below 3.5 standard units (s.u.), the Permittee shall conduct a confirming pH measurement within three minutes. If that measurement is below pH 3.5 s.u., the Permittee shall discontinue molybdenum sulfide feed to the affected roaster and emissions from the affected roaster shall be vented to the unaffected roaster off-gas system as soon as possible. Within 30 minutes after repairs are completed and normal operations begins, the Permittee shall make a thorough inspection of all equipment in the roaster off-gas system, consisting of the roaster and each piece of subsequent control equipment, to confirm equipment settings. This shall include verification that exhaust is vented properly, the scrubber slurry pumps are in operation and the scrubber pH level is greater than 3.5. The results of the inspection and the pH measurement(s) shall be recorded.
- ii. For each missing CEMS data period, the Permittee shall continuously record the pH of the scrubber slurry underflow during the entire period to ensure proper operation of the scrubber.

j. Specific Recordkeeping Requirements for the Molybdenum Plant

[PCC & 17.12.180.A.4]

The Permittee shall record and maintain all of the following information:

- i. A log of roaster operations and the operation of each component of roaster off-gas system, including the hours of the day that the roasters and their associated air pollution control equipment were in operation; the occurrence and duration of any startup, shutdown, or malfunction in roaster operations; and the occurrence and duration of any malfunction of the roaster operations air pollution control equipment.
- ii. The pH of each scrubber underflow and the results of the inspections required by Condition IX.C.4.i.
- iii. The date, time, and duration of when feed to a roaster is discontinued and when feed is resumed.
- iv. All records related to the SO₂ Generation Determinations, including the following:
 - (1) All sampling and analysis records for each 24-Hour Composite Sampling Period, which shall include all the information, required by Attachment "A", Condition XIII.
 - (2) All data/inputs and results/outputs of the equation in Condition IX.C.3.e, including feed sulfur content, feed moisture content, corrections of wet feed value to dry feed value, feed rate, and all information necessary for conversion of data to pounds SO₂ generated per hour, as required by Condition IX.C.3.g.
 - (3) All records related to the roaster feed weigh bin load cells, including daily inspection logs, data and results of all calibrations, and any corrective action taken.
 - (4) For each period when no valid samples or data exist for a 24-Hour Composite Sampling Period or when the feed weigh bin load cell system is unable to obtain valid measurements of feed to the molybdenum roaster(s) (regardless of whether valid measurements of feed data has been obtained by manually calibrating the feed screw speed), the date, time, and duration of any such periods; the reasons why no valid samples, data, or measurements are available for such periods; any corrective action taken; and whether the missing data procedures were implemented.

- v. All records related to the SO₂ Mass Emissions Determinations or the operations of the CEMS, including the following:
 - (1) The date, time, and duration of any periods during which the CEMS is inoperative, and all records of the pH of the scrubber slurry underflow during such periods.
 - (2) All measurements from the CEMS, including concentration of SO₂, volumetric flow rate, and stack temperature.
 - (3) All valid CEMS data, reasons and time periods for invalid CEMS data, and whether the missing data procedures were used.
 - (4) Data and results for CEMS tests, audits, and calibrations, and copies of CEMS testing protocol and performance testing reports.
 - (5) Records of CEMS repairs, adjustments, or maintenance, and any corrective action taken with regard to the CEMS.
 - (6) All information necessary for conversion of data to pounds of SO₂ mass emissions per hour.
- vi. All records related to the comparison of the SO₂ Generation Determinations with the corresponding SO₂ Mass Emissions Determinations, and copies of each CEMS Excess Emissions and Monitoring System Performance Report of Attachment "D".

4. Performance Testing Requirements

[PCC 17.12.180.A.3.c, PCC 17.12.050 & PCC 17.16.360.H]

- a. The Permittee shall conduct performance testing on Source ID 058. Testing shall be conducted biannually (to be completed in 2nd and 4th year of permit term) to determine the pounds of sulfur and SO₂ emitted per hour.
- b. A sample of the inlet molybdenum sulfide feed shall be obtained during the performance test. The sample of the inlet molybdenum sulfide feed shall be analyzed for sulfur content. The roaster performance tests shall be conducted in accordance with Reference Method 6 in 40 CFR 60, Appendix A.
- c. The satisfactory completion of annual RATA testing may be used to satisfy the performance-testing requirement.
- d. The pH of the scrubber slurry underflow shall be recorded during the performance test and reported as part of the test results.

- e. The test methods and procedures required by this Condition are as follows:
 - i. The reference methods in 40 CFR 60, Appendix A shall be used to determine compliance with the standards prescribed in Conditions IX.C.1 as follows:
 - EPA Reference Method 1 for sample and velocity traverses;
 - EPA Reference Method 2 for velocity and volumetric flow rate;
 - EPA Reference Method 3 or 3A for gas analysis and calculation of excess air, using the integrated sample technique;
 - EPA Reference Method 6 or 6C for concentration of SO₂.
 - ii. For EPA Reference Method 6, the sampling site shall be the same as that selected for Method 5.
 - iii. For EPA Reference Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately 30-minute intervals.

5. Permit Shield

[PCC 17.12.310]

Compliance with conditions of this permit condition shall be deemed compliance with PCC 17.16.360(E), (F), (G), and (H), for the equipment subject to Condition IX.C.

D. Volatile Organic Compounds and Hazardous Air Pollutants

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the molybdenum leach plant fume scrubber (Source ID 118) in a manner consistent with good air pollution control practices for minimizing volatile organic compound and hazardous air pollutant (chlorine and hydrochloric acid) emissions.

[PCC 17.12.180.A.2 & 17.12.350.A.3.e]

[Material Permit Conditions are indicated by underline and italics]

X. SPECIFIC REQUIREMENTS FOR THE DECANT SOLIDS HANDLING OPERATION AND THE MAGNETIC STEEL RECOVERY PLANT

A. This Condition is applicable to Source IDs 123 and 125 under Sections VII, VIII, and IX of Attachment “C”.

B. Particulate Matter and Opacity Limits

1. Emission Limitations/Standards

a. For Magnetic Steel Recovery equipment that is subject to NSPS as indicated in Section VIII of Attachment “C” (Source ID 125), the Permittee shall not cause to be discharged into the atmosphere emissions in excess of the limitations shown in Condition III.B.

[40 CFR 60.382(a)(1), (a)(2) & (b)]

b. For Decant Solids Handling equipment that is not subject to NSPS as indicated in Section IX of Attachment “C”, Table C-1 (Source ID 123 loader), the Permittee shall not cause to be discharged into the atmosphere emissions in excess of the limitations shown in Condition IV.B.

[PCC 17.16.040.A & 17.16.360(B).]

2. Air Pollution Control Requirements

- a. *The Permittee shall maintain and operate all ancillary pollution control devices including spray bars, duct work and hoods used to capture particulate matter emissions in a manner consistent with good air pollution control practice for minimizing particulate matter emissions*

[PCC 17.12.180.A.2]

[Material Permit Conditions are indicated by underline and italics]

- b. The Permittee shall ensure that the coarse ore material is adequately wet to prevent particulate matter emissions in excess of the emission and opacity limitations shown in Condition III.B prior to entering the Magnetic Steel Recovery System.

[PCC 17.12.180.A.2]

3. Monitoring, Recordkeeping, and Reporting

[PCC 17.12.180.A.3, A.4 & A.5]

a. Monthly Particulate Matter Emission Rate Calculations

In order to determine whether the Permittee is in compliance with Condition II.K.1, the Permittee shall compute the monthly emission rate for each process listed in Sections VII, VIII, and IX of Attachment "C", using throughput, emission factor, and control efficiency data.

- i. The Permittee shall monitor and record the daily material throughput for each emission unit listed in Sections VII, VIII, and IX of Attachment "C".

ii. Emission Calculations

The Permittee shall calculate monthly PM and PM₁₀ emissions from each emission unit listed in Sections VII, VIII, and IX of Attachment "C", Table C-1 using the following procedure.

- (1) The Permittee shall compute the pounds of PM and PM₁₀ emitted from each emission unit during each month as the product of the material throughput for the month (Condition X.C.3.a.i expressed in tons) and the unit-specific emission factor, if such factor is available. If more than one emission factor has been determined since issuance of this permit, the Permittee shall use the average of all such emission factors. If a unit-specific emission factor has not been developed, the Permittee shall instead use the following emission factors:

- (a) Source ID 125 - 0.000092 pounds of PM per ton of material processed (From ADEQ's Crushing and Screening Plant General Permit. 0.000046 pounds of PM₁₀ per ton of material, assuming that the quantity of PM is twice that of PM₁₀)

- (2) The Permittee shall convert the pounds of PM emitted per month to tons of PM emitted per month and shall calculate PM₁₀ emissions assuming that PM and PM₁₀ emission rates are equal (unless the Permittee demonstrates otherwise through performance testing).

[PCC 17.12.180.A.3]

- b. The Permittee shall comply with the additional monitoring, recordkeeping, and reporting requirements of this permit including the following:

[PCC 17.12.180.A.3.c]

- i. Portions of Source ID 123 are subject to NSPS as indicated in Section and VIII of Attachment "C". For these emission units, the Permittee shall comply with the monitoring, recordkeeping, and reporting requirements of Condition III.

- ii. Portions of Source IDs 123 and 125 are not subject to NSPS as indicated in Sections VII, VIII, and IX of Attachment “C”. For these emission units, the Permittee shall comply with the monitoring, recordkeeping, and reporting requirements of Condition IV.
- iii. Source IDs 123 and 125 are not subject to CAM as indicated in Attachment “C”. For these emission units, the Permittee shall comply with Conditions II.I.

4. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this section shall be deemed compliance with 40 CFR 60.382(a)(1), (a)(2), & (b), and PCC 17.16.360(B) & PCC 17.16.130 for the equipment subject to this section.

XI. REQUIREMENTS FOR THE NATURAL GAS FIRED HEATERS AND BOILERS

A. Applicability

This Section applies to natural gas fired heaters and boilers listed in Attachment “C”, Section X.

B. Operating Limitations

[PCC 17.12.180.A.2]

The Permittee shall burn only natural gas or propane as fuel in the heaters and boilers.

C. Particulate Matter (PM/PM₁₀) and Opacity

1. Emission Limitations/Standards

[PCC 17.16.165.C.1]

- a. The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel in the heaters or boilers in excess of the amount calculated by the following equation:

$$E = 1.02 Q^{0.769}$$

Where:

- E = the maximum allowable particulate emissions rate in pounds-mass per hour.
- Q = the heat input in million Btu per hour.

- b. Visible Emissions - Opacity Standard

[PCC 17.16.165.J]

The Permittee shall not cause, allow or permit to be emitted into the atmosphere from the heaters or boilers, smoke which exceeds 20 percent opacity.

2. Monitoring, Record Keeping and Reporting

- a. The Permittee shall report all six-minute periods in which the opacity of any plume or effluent exceeds 20 percent from the heaters and boilers. [PCC 17.16.165.J]
- b. The Permittee shall monitor and record the monthly usage of natural gas or propane for use in emission calculation purposes. [PCC 17.12.180.A.3]

c. The Permittee shall compute the monthly PM emission rate for the heaters and boilers listed in Section X of Attachment “C”, as the product of the monthly natural gas use and 7.6 pounds of PM per million standard cubic foot of natural gas used (emission factor from EPA Publication No. AP-42 “Compilation of Air Pollutant Emission Factors”). The PM emission rate shall be expressed as tons per month and shall be used in conducting the calculations of Condition II.K.2.a. The Permittee shall compute PM₁₀ emissions (tons per month) for use in the calculation required by Condition II.K.2.a assuming that the PM₁₀ emission rate is equal to the PM emission rate. [PCC 17.12.180.A.3]

d. The Permittee shall conduct opacity monitoring in accordance with Condition II.I. Heaters and boilers which are rated at less than one million British thermal units per hour are exempt from the requirements of this permit condition.

3. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this Section shall be deemed compliance with PCC 17.16.165(c)(1) and (J), for the equipment subject to this Part.

D. Sulfur Dioxide [PCC 17.12.180.A.3]

1. The Permittee shall maintain a vendor-approved copy of that part of the Federal Energy Regulatory Commission (FERC) approved Tariff agreement that contains the sulfur content and the lower heating value of the pipeline quality natural gas.
2. The Permittee shall compute the monthly SO₂ emission rate for the heaters and boilers listed in Section X of Attachment “C”, Table C-1 as the product of the monthly natural gas use and 0.6 pounds of SO₂ per million standard cubic foot of natural gas used (from EPA Publication No. AP-42 “Compilation of Air Pollutant Emission Factors”). The SO₂ emission rates shall be expressed as tons per month and shall be used in conducting the calculations of Conditions II.J.2.a. The Permittee may compute a combined emission rate for all natural gas fired heaters and boilers.

XII. REQUIREMENTS FOR THE PORTABLE SCREENING PLANT AND THE ION EXCHANGE PLANT

A. Applicability

This Section applies to the Portable Screening Plant (Source ID 124) and the ion exchange plant (Source ID 128)) listed in Attachment “C”, Section XII.

B. Particulate Matter (PM/PM₁₀) and Opacity

1. Emission Limitations/Standards [PCC 17.16.370]

- a. The Permittee shall not cause, suffer, allow or permit the discharge of particulate matter into the atmosphere except as fugitive emissions, in any one hour from any gravel or crushed stone processing plant in total quantities in excess of the amount calculated by the equation set forth below:

For Process Sources Having Process Weight Rates of 30 Tons per Hour or Less:

$$E = 3.59P^{0.62}$$

For Process Sources Having a Process Weight Rate Greater than 30 Tons per Hour:

$$E = 17.31P^{0.16}$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour
P = the process weight rate in tons-mass per hour. The total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter.

b. Visible Emissions - Opacity Standard [PCC 17.16.130.B]

The opacity of emissions from any of the equipment into the atmosphere shall not be greater than 20 percent as measured by EPA Reference Method 9.

2. Air Pollution Control Requirements

[Material Permit Conditions are indicated by underline and italics]

a. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall install, maintain, and operate the baghouse associated with the lime silo of Source ID 128 in a manner consistent with good air pollution control practices for minimizing particulate matter emissions.*

[PCC 17.12.180.A.2 and 17.12.350.A.3.d & e]

3. Monitoring, Recordkeeping, and Reporting Requirements

[PCC 17.12.180.A.3, A.4 & A.5]

a. The Permittee shall record the daily production weight gravel and crushed stone of the Portable Screening Plant (Source ID 124) and the ion exchange plant (Source ID 128).

[PCC 17.16.370.G]

b. The Permittee shall monitor and record the monthly production rate for use in emission calculation purposes.

[PCC 17.12.180.A.3 & 4]

c. Opacity Monitoring Requirement

The Permittee shall conduct opacity monitoring for non-fugitive emission units associated with Source IDs 124 and 128 in accordance with Condition II.I. The Permittee shall conduct opacity monitoring for fugitive emission units associated with Source IDs 124 and 128 in accordance with Condition XIX.B.3.d.

d. The Permittee shall compute the monthly non-fugitive source PM emission rate for the conveyor transfer points of Source ID 124 as the product of the monthly production weight and 0.000092 pounds PM per ton of material processed. The Permittee shall compute the monthly PM₁₀ emission rate by assuming that PM and PM₁₀ emissions are equal unless otherwise demonstrated. For Source ID 128, the Permittee shall assume that the monthly PM emission rate is equal to 0.00031 tons per month and that the monthly PM₁₀ emission rate is equal to 0.00016 tons per month.

e. The PM emission rate for each source shall be expressed as tons per month and shall be used in conducting the calculations of Condition II.K.2.a.

4. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this Part shall be deemed compliance with the State SIP R9-3-522-A.2.a & b, PCC 17.16.130(B), PCC 17.16.370(D) & (G), and P.C.C. 17.16.370 for the equipment subject to this Part.

XIII. REQUIREMENTS FOR THE SOLUTION EXTRACTION AND ELECTROWINNING (SX/EW) PROCESS, THE TWIN BUTTES ELECTROWINNING TANKHOUSE PROCESS, AND THE SEQUENTIAL METAL EXTRACTION PLANT

A. Applicability

This Section applies to the SX/EW, Twin Buttes Electrowinning Tankhouse process (Source IDs 076 and 105, respectively), the Sequential Metal Extraction Plant (SME) (Source ID 127) listed in Attachment “C”, Section XII.

B. Volatile Organic Compounds (VOCs), Hydrogen Sulfide, and Other Miscellaneous Emissions

1. Emission Limitations/Standards

- a. The Permittee shall not cause the emission of gaseous or odorous materials from equipment and operations associated with the processes described in Source IDs 076, 105, 127 and 129 of Attachment “C” Section XII, in such quantities or concentrations as to cause air pollution. [PCC 17.16.430.]
- b. Materials including solvents or other volatile compounds, acids, and alkalis utilized in the processes described in Source IDs 076, 105, 127 and 129 of Attachment “C”, Section XII shall be processed, stored, used, and transported in such a manner and by such means that they will not evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge, the installation and use of such control methods, devices, or equipment shall be mandatory. [PCC 17.16.430.F]
- c. Where a stack, vent or other outlet is at such a level that fumes, gas, mist, odor, smoke, vapor, or any combination thereof constituting air pollution is discharged to adjoining property, the Control Officer may require the installation of abatement equipment or the alteration of such stack, vent or other outlet by the Permittee thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to the adjoining property. [PCC 17.16.430.G]
- d. The Permittee shall not allow hydrogen sulfide to be emitted from any location in such manner and amount that the concentration of such emissions into the ambient air at any occupied place beyond the premises on which the source is located exceeds 0.03 parts per million by volume for any averaging period of 30 minutes or more. [PCC 17.16.430.H]

2. Air Pollution Control Requirements

[PCC 17.12.180.A.2 & 17.12.350.A.3.e]

[Material Permit Conditions are indicated by underline and italics]

- a. *The Permittee shall maintain the existing covers on the mixer settler tanks to control emissions from the Solution Extraction Plant (Source ID 076).*
- b. *The Permittee shall use one or more of the following methods to control emissions from the Electrowinning Tankhouse (Source ID 105):*
 - i. *Foam;*
 - ii. *Blankets;*
 - iii. *Surfactants;*

- iv. Thermal retention balls; or
 - v. Other effective means of controlling sulfuric acid emissions approved by the Control Officer.
- c. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall install, maintain, and operate the dry media scrubbers associated with the sequential metal extraction tanks (Source ID 127) and the ventilation scrubber (Source ID 129) in a manner consistent with good air pollution control practices for minimizing hydrogen sulfide emissions.
3. Monitoring, Recordkeeping, and Reporting Requirements
- [PCC 17.12.180.A.2, A.3.c, A.4 and 17.12.350.A.3.c]
[Material Permit Conditions are indicated by underline and italics]
- a. The Permittee shall maintain a record of the control measures used at the SX/EW (Source IDs 076 and 105) plant.
 - b. At all times, including periods of startup, shutdown, and malfunction, the permittee shall install and maintain the hydrogen sulfide monitors in the vent line of each set of the sequential metal extraction tanks (Source ID 127) for detecting emission of hydrogen sulfide.
 - c. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall install and maintain ambient monitors for monitoring hydrogen sulfide in the SME plant (Source ID 127).

4. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this Part shall be deemed compliance with PCC 17.16.430(D), (F), (G), and (H) for the equipment subject to this Part.

XIV. REQUIREMENTS FOR THE GASOLINE TANKS

A. Applicability

This Section applies to the gasoline storage tanks listed in Attachment “C”, Section XII, Source ID 078.

B. Operating Limitations

1. Operational Requirements

- a. The Permittee must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.11115(a)]

- b. The Permittee shall equip all gasoline tanks with a submerged filling device, or acceptable equivalent, for the control of hydrocarbon emissions.

[PCC 17.16.230.B]

- c. After January 10, 2011, the Permittee shall comply with 40 CFR 63.11116 by not allowing gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:
 - i. Minimize gasoline spills;
 - ii. Clean up spills as expeditiously as practicable;
 - iii. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;
 - iv. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators. [40 CFR 63.11116(a) and 63.11117(a)]
- d. After January 10, 2011, the Permittee shall comply with 40 CFR 63.11117 for storage tanks with a monthly gasoline throughput of 10,000 gallons or more by loading gasoline with submerged filling that meets one the following: [40 CFR 63.11117(b)]
 - i. Submerged fill pipes installed on or before November 9, 2006, shall be no more than 12 inches from the bottom of the storage tank.
 - ii. Submerged fill pipes installed after November 9, 2006, shall be no more than 6 inches from the bottom of the storage tank.
- e. All pumps and compressors that handle gasoline shall be equipped with mechanical seals or other equipment of equal efficiency to prevent release of organic contaminants into the atmosphere. [PCC 17.16.230.D]

2. Monitoring and Recordkeeping Requirements

- a. The Permittee shall keep records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. [40 CFR 63.11125(d)(1)]
- b. The Permittee shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with XIV.B.1.a of Attachment B, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.11125(d)(2)]
- c. The Permittee shall, for the gasoline storage tanks, maintain a file of the typical Reid vapor pressure of gasoline stored and of dates of storage. Dates on which the storage vessel is empty shall be shown. [PCC 17.16.230.E.1]
- d. The Permittee shall record the average monthly temperature, and true vapor pressure of gasoline stored at such temperature, if the true vapor pressure is greater than 470 mmHg (9.1 psia) and the gasoline is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent. [PCC 17.16.230.E.2.b]

- e. The average monthly storage temperature shall be an arithmetic average calculated for each calendar month, or portion thereof if storage is for less than a month, from bulk liquid storage temperatures determined at least once every seven days. [PCC 17.16.230.E.3]
- f. The true vapor pressure shall be determined by the procedures in American Petroleum Institute Bulletin 2517, amended as of February 1980 (and no future editions), which is incorporated herein by reference and on file with the Office of the Secretary of State. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Control Officer requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, the Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available upon request to the Control Officer when typical Reid vapor pressure is used. [PCC 17.16.230.E.4]
- g. After January 10, 2011, the Permittee shall, upon request by the Control Officer, demonstrate that their average monthly throughput is less than the following thresholds: [40 CFR 63.11111(e) and (b)]
 - i. 10,000 gallons for gasoline tank SP-13; and
 - ii. 100,000 gallons for gasoline tanks ML-11(1) and ML-11(2)
- h. For all gasoline tanks, the Permittee shall have records documenting the gasoline throughput available within 24 hours of a request by the Control Officer and the Administrator. [40 CFR 63.11111(e) and (b)]

3. Reporting Requirements

The Permittee shall report, by March 15 of each year, the number, duration, and a brief description of each type of malfunction which occurred during the previous calendar year and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by the Permittee during a malfunction of an affected source to minimize emissions in accordance with XIV.B.1.a of Attachment B, including actions taken to correct a malfunction. No report is necessary for a calendar year in which no malfunctions occurred. [40 CFR 63.11126(b)]

4. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 63.11111(e), 63.11113(b), 63.11115(a) & (b), 63.11116(a) & (b), 63.11117(a), (b), (d), & (e), 63.11124(a), 63.11125(b) & (d), 63.11126(b), A.A.C. R18-2-710.B, D, E.1, E.2.b, E.3, and E.4, for the equipment subject to this Part.

XV. GENERAL REQUIREMENTS FOR STATIONARY ENGINES

A. Applicability:

This Section is applicable to all stationary engines listed in Attachment “C”, Section XI.

B. Operating Limitations

- The Permittee shall not operate any single stationary engine listed in the table below more than 1000 hours per 12-month rolling period:

[PCC 17.12.190.B and 17.12.350.A.3.a]

[Material Permit Conditions are indicated by underline and italics]

Table XV-1

Description	Serial Number
<u>Tailings thickener emergency power generator (diesel)</u>	<u>48104</u>
<u>Mill reservoir emergency fire water pump (natural gas)</u>	<u>905553002</u>
<u>Moly emergency power generator for roaster (natural gas)</u>	<u>6034810</u>
<u>Continuous emission monitoring system emergency power generator(natural gas)</u>	<u>6034820</u>
<u>Hydromet, Twin Buttes emergency fire water backup (diesel)</u>	<u>72015015</u>
<u>Radio hill backup power (propane)</u>	<u>826088</u>
<u>Love Shack backup power (propane)</u>	<u>834015</u>
<u>Dispatch tower #1 backup power (propane)</u>	<u>834016</u>
<u>Mine eng backup power (propane)</u>	<u>834017</u>
<u>Administration building backup power (natural gas)</u>	<u>Not available</u>
<u>Mine maintenance truck shop fire water pump (diesel)</u>	<u>Not available</u>
<u>SCC Emergency Generator</u>	<u>Not Available</u>
<u>Twin Buttes Administration (Sand Castle) building backup power (propane)</u>	<u>Not Available</u>
<u>Twin Buttes Radio Hill backup power (propane)</u>	<u>Not Available</u>
<u>Tailings Pump Station backup power (diesel)</u>	
<u>Dispatch Tower #2 backup power (propane)</u>	
<u>Sierrita Health Clinic backup power (propane)</u>	
<u>Sierrita Mobile Radio Tower backup power (Diesel)</u>	
<u>Sierrita Administrative Communications Room backup power (Diesel)</u>	
<u>Sierrita Chlorinator Scrubber backup power (natural gas)</u>	
<u>Primary Crusher Generator</u>	<u>E040646390</u>

2. *The Permittee shall not operate the Hydromet #3 emergency headwall diesel generator (Source ID 126) more than 1,500 hours per 12-month rolling period.*

[PCC 17.12.190.B & 17.12.350.A.3.a]

[Material Permit Conditions are indicated by underline and italics]

C. Monitoring, Recordkeeping, and Reporting

[PCC 17.12.180.A.3.c]

1. The Permittee shall monitor and record the monthly hours of operation for use in emission calculation purposes.
2. By the 30th day of each month, the Permittee shall monitor and record the monthly and 12-month rolling hours of operation for all generators listed in Table XV-1 and the Hydromet #3 emergency headwall diesel generator.
3. The Permittee shall compute the monthly PM and PM₁₀ emission rate for the stationary engines listed in Section XI of Attachment “C”, as follows:
 - a. For engines that are subject to NSPS 40 CFR 60 Subpart IIII, the PM emission rate shall be calculated as the product of the hours of operation (hours per month), the capacity of the engine (horsepower) and the engine’s applicable emission limit (grams per horsepower-hour).
 - b. For engines that are not subject to NSPS 40 CFR 60 Subpart IIII, the PM and PM₁₀ emission rates shall be calculated using the hours of operation data and the PM/PM₁₀ emission factor from EPA Publication No. AP-42 “Compilation of Air Pollutant Emission Factors”, Chapter 3, Stationary Internal Combustion Sources. The emission factors of Chapter 3, Section 3.3 (0.000721 pounds of PM₁₀ horsepower-hour for gasoline and 0.0022 pounds of PM₁₀ per horsepower-hour for diesel) shall be used for engines less than 600 horsepower. The emission factor of Chapter 3, Section 3.4 (0.0007 pounds of PM₁₀ per horsepower-hour for diesel) shall be used for engines greater than or equal to 600 horsepower. The emission factor of 6.5 x 10⁻⁷ pounds PM₁₀ per horsepower-hour shall be used for natural gas and propane fired engines (emission factor from AP-42 Chapter 3, Section 3.2-2 converted to pounds PM₁₀ per horsepower-hour). The Permittee shall assume that PM and PM₁₀ emission rates are equal.
 - c. The PM and PM₁₀ emission rate for each engine shall be expressed as tons per month and shall be used in conducting the calculations of Condition II.K.2.a.
4. The Permittee shall compute the monthly SO₂ emission rate for the stationary engines listed in Section XI of Attachment “C” using the monthly hours of operation the emission factors listed in the table below. The SO₂ emission rate for each engine shall be expressed as tons per month and shall be used in conducting the calculations of Condition II.J.2.a.

Engine Type	Emission Factor (pounds SO ₂ emitted per horsepower-hour)
Diesel engine less than or equal to 600 horsepower	0.00205
Diesel engine greater than 600 horsepower	0.00728
Natural gas engine	5 x 10 ⁻⁶

For propane-fired engines, the SO₂ emission rate shall be calculated assuming maximum fuel use during the hours of operation and assuming that all of the sulfur content in the propane is converted to SO₂.

5. The Permittee shall conduct quarterly opacity surveys on the diesel fueled engines identified in Condition XV.B in accordance with Condition II.I.

XVI. REQUIREMENTS FOR STATIONARY ENGINES SUBJECT TO COUNTY RULES

A. Applicability

This Section applies to stationary engines listed in Attachment “C”, Table C-1, Section XI.

B. Fuel Limitations

1. The Permittee shall use only natural gas, propane or low sulfur oil (to include diesel fuel) in the stationary engines. [PCC 17.16.340.H]
2. When low sulfur oil is fired, stationary engines shall burn fuel which limits the emission of sulfur dioxide to 1.0 pound per million Btu heat input. [PCC 17.16.340.F]

C. Particulate Matter and Opacity Limits

1. Emission Limitation/Standards

The Permittee shall not allow or permit the emission of particulate matter, caused by combustion of fuel, from any stationary engine in excess of the amounts calculated by one of the following equations:

- a. For equipment having a heat input rate of 4200 million Btu per hour or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 1.02Q^{0.769}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

Q = the heat input in million Btu per hour.

- b. For equipment having a heat input rate greater than 4200 million Btu/hr., the maximum allowable emissions shall be determined by the following equation:

$$E = 17.0Q^{0.432}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

Q = the heat input in million Btu per hour.

[PCC 17.16.340.C and PCC 17.16.340.C]

- c. The Permittee shall not allow or permit to be emitted into the atmosphere from any stationary rotating machinery, smoke for any period greater than 10 consecutive seconds which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes. [PCC 17.16.340.E and PCC 17.16.340.E]

- d. For purposes of this condition, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all operating fuel-burning units on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted. [PCC 17.16.340.B and PCC 17.16.340.B]

2. Monitoring, Recordkeeping and Reporting Requirements

The Permittee shall keep records of fuel supplier specifications. The specifications shall contain information regarding the name of fuel supplier and higher heating value of the fuel. These records shall be made available to ADEQ upon request. [PCC 17.12.180.A.3.c]

3. Permit Shield [PCC 17.12.310]

Compliance with the terms of this section shall be deemed compliance with PCC 17.16.340.B, C, & E and P.C.C.17.16.340.B, C, E, F, & H.

D. Sulfur

1. Monitoring, Recordkeeping and Reporting Requirements

- a. The Permittee shall maintain a record of the fuel sulfur content and lower heating value of the fuel. [PCC 17.16.340.I and PCC 17.16.340.I]
- b. The Permittee shall report to the Control Officer any daily period during which the sulfur content of the fuel being fired in the machine exceeds 0.8%. [PCC 17.16.340.J and PCC 17.16.340.J]
- c. The methods listed in PCC 17.16.340.K shall be used should the Permittee be required to conduct testing to demonstrate compliance with this condition. [PCC 17.16.340.K]

2. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this Section shall be deemed compliance with PCC 17.16.340.F, H, I, J, & K, and P.C.C.17.16.340.F, H, I, J, & K for the activities subject to this Part.

XVII. REQUIREMENTS FOR STATIONARY COMPRESSION IGNITION ENGINES SUBJECT TO 40 CFR 60 SUBPART III

A. Applicability

This condition applies to stationary compression ignition internal combustion engines listed as subject to NSPS 40 CFR 60 Subpart III in Table C-1 of Attachment "C", Section XI.

B. Operating Limitations

- 1. The Permittee shall operate and maintain the engine according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer. A copy of the instructions or procedures shall be kept on site and made available to ADEQ upon request. [40 CFR 60.4211(a) and PCC 17.12.180.A.2]

2. The Permittee shall only change those engine settings that are permitted by the manufacturer. [40 CFR 60.4211(a)]
3. The Permittee shall meet the requirements of 40 CFR Parts 89, 94, or 1068, as they apply. [40 CFR 60.4211(a)]
4. The Permittee shall operate and maintain the internal combustion engine according to the manufacturer's written instructions or procedures according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer over the entire life of the engine. [40 CFR 60.4206]
5. Fuel Requirements [40 CFR 60.4207(b)]
 - a. On and before October 1, 2010, the Permittee shall use diesel fuel that meets the following requirements of 40 CFR 80.510(a):
 - i. Maximum sulfur content of 500 parts per million (ppm) and
 - ii. Minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
 - b. After October 1, 2010, an engine that uses diesel fuel and has a displacement of less than 30 liters per cylinder, shall use diesel fuel that meets the following requirements of 40 CFR 80.510(b):
 - c. Maximum sulfur content of 15 parts per million (ppm) and
 - d. Minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
6. Additional Emergency Engine Requirements [40 CFR 60.4211(e) and 40 CFR 60.4209(a)]
[PCC 17.12.180.A.3.c & PCC 17.12.350.A.3.c]
 - a. This Condition applies to the generators in Table C-1, Section XI labeled as emergency generators subject to 40 CFR 60 Subpart III.
 - b. *The Permittee shall install a non-resettable hour meter prior to startup of the engine.* [PCC 17.12.350.A.3.c]
[Material permit conditions are indicated by underline and italics]
 - c. Emergency internal combustion engines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine.
 - d. The Permittee shall not operate the emergency engine for the purposes of maintenance checks and readiness testing for more than 100 hours per year unless the Permittee maintains records identifying the Federal, State, or local standards that require maintenance and testing of emergency internal combustion engines beyond 100 hours per year. Copies of such records shall be provided to ADEQ upon request.
 - e. The Permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per year.

- f. The Permittee shall not operate emergency engines except for emergency purposes, and maintenance and testing. There is no limit of the use of the engine in emergency situations (except as indicated in Condition XV.B).
- g. The Permittee shall maintain monthly records of engine operation. The records shall include the purpose of operation and the duration of time the engine was operated. The record shall identify whenever the operation of the engine was for emergency purposes.

C. Emission Limitations and Standards

1. Non-Emergency Engines

2007 model year and later non-emergency internal combustion engines with a displacement of less than 30 liters per cylinder shall comply with the appropriate emission limitation as follows:

- a. 2007 model year and later engines with a maximum engine power less than or equal to 3000 horsepower and a displacement of less than 10 liters per cylinder shall meet the emission standards for new nonroad compression ignition engines in 40 CFR 89.112, 89.113, 1039.101, 1039.102, 1039.104, 1039.105, 1039.107 and 1039.115 as applicable for all pollutants for the same model year and maximum engine power. [40 CFR 60.4201(a)]
- b. 2007 through 2010 model year engines with a maximum power greater than 3,000 horsepower and a displacement of less than 10 liters per cylinder shall meet the emission standards in Conditions XVII.F.1.a, XVII.G.1, XVII.H.1, and XVII.I, for all pollutants, for the same maximum engine power.
- c. 2011 model year and later engines with a maximum engine power greater than 3,000 horsepower and a displacement of less than 10 liters per cylinder shall meet the emission standards for new nonroad engines in 40 CFR 1039.101, 1039.102, 1039.104, 1039.105, 1039.107, and 1039.115, as applicable for all pollutants for the same maximum engine power. [40 CFR 60.4201(d)]

2. Emergency Engines

2007 model year and later emergency internal combustion engines with a displacement of less than 30 liters per cylinder that are not fire pump engines shall comply with the appropriate emission limitation as follows: [40 CFR 60.4205(b)]

- a. 2007 model year and later engines with a maximum engine power less than or equal to 3,000 horsepower and a displacement of less than 10 liters per cylinder shall meet the emission standards specified below: [40 CFR 60.4202(a)]
 - i. 2007 model year engines with a maximum engine power less than 50 horsepower shall meet the emission standards for new nonroad compression ignition engines in 40 CFR 89.112 and 40 CFR 89.113, for all pollutants, for the same model year and maximum engine power. [40 CFR 60.4202(a)(1)]
 - ii. 2008 model year and later engines with a maximum engine power of less than 50 horsepower shall meet the emission standards for new nonroad compression ignition engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and Table 2 to 40 CFR Part 60, Subpart III. [40 CFR 60.4202(a)(1)]

- iii. 2007 model year and later engines with a maximum engine power greater than or equal to 50 horsepower, shall meet the emission standards for new nonroad compression ignition engines in 40 CFR 89.112 and 40 CFR 89.113, for all pollutants, for the same model year and maximum engine power.

[40 CFR 60.4202(a)(2)]

- b. 2007 model year and later engines with a maximum engine power greater than 3,000 horsepower and a displacement of less than 10 liters per cylinder shall meet the emission standards specified below:

- i. 2007 through 2010 model year engines shall meet the emission standards in Conditions XVII.F.1.a, XVII.G.1, XVII.H.1, and XVII.I, for all pollutants for the same maximum engine power.

- ii. 2011 model year and later engines shall meet the emission standards for new nonroad compression ignition engines in 40 CFR 89.112 and 40 CFR 89.113, for all pollutants for the same model year and maximum engine power. [40 CFR 60.4202(b)]

D. Monitoring and Recordkeeping Requirements

- 1. For 2007 model year and later internal combustion engines required to comply with the emission standards in Conditions XVII.C.1 or XVII.C.2, the Permittee shall comply by purchasing an engine certified to meet the applicable emission standards in Condition XVII.C, for the same model year and maximum power. The engine shall be installed and configured according to the manufacturer’s specifications. [40 CFR 60.4211(c)]

- 2. For any fire pump that is manufactured during or after the model year that applies to the fire pump engine power (EP) rating in the following table and is required to comply with the emission standards in Conditions XVII.F.1.b, XVII.G.2, and XVII.H.2, shall comply by purchasing an engine certified to meet such emission standards, as applicable, for the same model year and National Fire Protection Association (NFPA) nameplate engine power. The engine shall be installed and configured according to the manufacturer’s specifications. [40 CFR 60.4211(c)]

Engine Power (EP) (horsepower)	Model Year
EP < 100	2011
100 ≤ EP < 175	2010
175 ≤ EP < 750	2009
EP ≥ 750	2008

- 3. For pre-2007 model year stationary compression ignition internal combustion engines that are required to comply with the emission standards specified in Conditions XVII.F.1.a, XVII.G.1, XVII.G.3, XVII.H.1, and XVII.I, the Permittee shall demonstrate compliance according to one of the methods specified below: [40 CFR 60.4211(b)]

- a. Purchasing an engine certified according to 40 CFR Part 89 or 40 CFR Part 94, as applicable, for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer’s specifications.

- b. Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test shall have been conducted using the methods specified in 40 CFR 60.4212 or 60.4213, and the methods shall have been followed correctly.

- c. Keeping records of engine manufacturer data indicating compliance with the standards.
 - d. Keeping records of control device vendor data indicating compliance with the standards.
 - e. Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable.
4. For any fire pump engine that is manufactured prior to 2008, and is required to comply with the emission standards in Conditions XVII.F.1.b, XVII.G.2, and XVII.H.2, the Permittee shall demonstrate compliance according to one of the methods specified in Condition XVII.D.3.a through e. [40 CFR 60.4211(b)]
 5. For any internal combustion engine that is required to comply with the emission standards specified in Condition XVII.G.3, the Permittee shall demonstrate compliance according to the following requirements: [40 CFR 60.4211(d)]
 - a. Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in 40 CFR 60.4213.
 - b. For engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in 40 CFR 60.4213.
 6. The Permittee shall maintain a copy of engine certifications or other documentation demonstrating that each engine complies with the applicable standards in this permit, and shall make the documentation available to ADEQ upon request. [PCC 17.12.180.A.4]

E. Testing Requirements [PCC 17.12.180.A.3.a, 40 CFR 60.4212 and 40 CFR 60.4213]

If the Permittee conducts performance testing on any internal combustion engine with a displacement of less than 30 liters per cylinder in order to demonstrate compliance with emission standards, such test shall be conducted according to 40 CFR 60.4212.

F. Particulate Matter

1. Emission Limits and Standards

- a. Pre-2007 model year engines with a displacement of less than 10 liters per cylinder shall meet the following particulate matter emission standards:

Maximum Engine Power (EP) (horsepower)	Emission Limit (grams/horsepower-hour)
$EP < 11$	0.75
$11 \leq EP < 50$	0.60
$50 \leq EP < 175$	N/A
$EP \geq 175$	0.40

[40 CFR 60.4204(a) and 60.4205(a)]

- b. Fire pump engines with a displacement of less than 30 liters per cylinder shall meet the following particulate matter emission standards: [40 CFR 60.4205(c)]

Maximum Engine Power (EP) (horsepower)	Model Year	Emission Limit (grams/horsepower-hour)
EP <11	2010 and earlier	0.75
	2011 and later	0.30
11 ≤ EP < 25	2010 and earlier	0.60
	2011 and later	0.30

Maximum Engine Power (EP) (horsepower)	Model Year	Emission Limit (grams/horsepower-hour)
25 ≤ EP < 50	2010 and earlier	0.60
	2011 and later	0.22
50 ≤ EP < 75	2010 and earlier	0.60
	2011 and later	0.30
75 ≤ EP < 100	2010 and earlier	0.60
	2011 and later	0.30
100 ≤ EP < 175	2009 and earlier	0.60
	2010 and later	0.22
175 ≤ EP < 300	2008 and earlier	0.40
	2010 and later	0.15
300 ≤ EP < 600	2008 and earlier	0.40
	2009 and later	0.15
600 ≤ EP < 750	2008 and earlier	0.40
	2009 and later	0.15
EP ≥ 750	2007 and earlier	0.40
	2008 and later	0.15

- i. For model years 2011 through 2013, fire pump engines that are greater than 50 horsepower, but less than 100 horsepower with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines. [Note 1 to Table 4 to 40 CFR 60 Subpart III]

For model years 2009 through 2012, fire pump engines that are greater than 100 horsepower, but less than 175 horsepower with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines. [Note 1 to Table 4 to 40 CFR 60 Subpart III]

2. Air Pollution Control Requirements

If a non-emergency engine is equipped with a diesel particulate filter to comply with the emission standards in Condition XVII.F, *the Permittee shall install, maintain and operate the particulate filter in accordance with good air pollution control practices for minimizing emissions.*

[PCC 17.12.180.A.2, 17.12.350.A.3.d and e]

[Material permit conditions are indicated by underline and italics]

3. Monitoring and Recordkeeping Requirements

- a. If a non-emergency engine is equipped with a diesel particulate filter to comply with the emission standards in Condition XVII.F, *the Permittee shall install a backpressure monitor on the diesel particulate filter that notifies the Permittee when the high backpressure limit of the engine is approached.*

[40 CFR 60.4209(b) and PCC 17.12.350.A.3.c]

[Material permit conditions are indicated by underline and italics]

- b. The Permittee shall operate and maintain the control device according to the manufacturer's written instructions or procedures that are developed by the Permittee and approved by the engine manufacturer. A copy of the instructions or procedures shall be kept onsite and made available to ADEQ upon request.

[40 CFR 60.4211(a) and PCC 17.12.180.A.2]

- c. If the internal combustion engine is equipped with a diesel particulate filter, the Permittee shall keep records of any corrective action taken after the backpressure monitor has notified the Permittee that the high backpressure limit of the engine is approached.

[40 CFR 60.4214(c)]

- d. If the Permittee elects to meet the emission limitations contained in Condition XVII.F.1.b.i or ii, the Permittee shall maintain records, including manufacturer specifications, demonstrating that the engine meets the horsepower and rpm specifications.

[PCC 17.12.180.A.4]

G. Nitrogen Oxides

1. Pre-2007 model year internal combustion engines, that are not fire pump engines, that have a displacement of less than 10 liters per cylinder shall meet the following emission standards:

Maximum Engine Power (EP) (Horsepower)	Emission Limit (grams/horsepower-hour)
EP < 11	7.8 *
11 ≤ EP < 50	7.1 *
EP ≥ 50	6.9

* indicates nonmethane hydrocarbons (NMHC) + NO_x

[40 CFR 60.4204(a) and 60.4205(a)]

2. Fire pump engines that have a displacement of less than 30 liters per cylinder shall meet the following emission standards: [40 CFR 60.4205(c)]

Maximum Engine Power (EP) (horsepower)	Model Year	Emission Limit* (grams/horsepower-hour)
EP <11	2010 and earlier	7.8
	2011 and later	5.6
11 ≤ EP < 25	2010 and earlier	7.1
	2011 and later	5.6
25 ≤ EP < 50	2010 and earlier	7.1
	2011 and later	5.6
50 ≤ EP < 75	2010 and earlier	7.8
	2011 and later	3.5
75 ≤ EP < 100	2010 and earlier	7.8
	2011 and later	3.5
100 ≤ EP < 175	2009 and earlier	7.8
	2010 and later	3.0
175 ≤ EP < 300	2008 and earlier	7.8
	2010 and later	3.0
300 ≤ EP < 600	2008 and earlier	7.8
	2009 and later	3.0
600 ≤ EP < 750	2008 and earlier	7.8
	2009 and later	3.0
EP ≥ 750	2007 and earlier	7.8
	2008 and later	4.8

* indicates nonmethane hydrocarbons (NMHC) + NO_x

- a. For model years 2011 through 2013, fire pump engines that are greater than 50 horsepower, but less than 100 horsepower with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines. [Note 1 to Table 4 of 40 CFR Subpart III]
- b. For model years 2010 through 2012, fire pump engines that are greater than 100 horsepower, but less than 175 horsepower with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines. [Note 2 to Table 4 of 40 CFR Subpart III]
3. If the Permittee elects to meet the emission limitations contained in Condition XVII.G.2.a or b, the Permittee shall maintain records, including manufacturer specifications, demonstrating that the engine meets the horsepower and RPM specifications. [PCC 17.12.180.A.4]

H. Carbon Monoxide

1. Pre-2007 model year internal combustion engines with a displacement of less than 10 liters per cylinder shall meet the following emission standards:

Maximum Engine Power (EP) (horsepower)	Emission Limit (grams/horsepower-hour)
EP <11	6.0
11 ≤ EP < 25	4.9
25 ≤ EP < 50	4.1
50 ≤ EP < 175	N/A
EP ≥ 177	8.5

2. Fire pump engines that have a displacement of less than 30 liters per cylinder shall meet the following emission standards: [40 CFR 60.4205(c)]

Maximum Engine Power (EP) (horsepower)	Model Year	Emission Limit (grams/horsepower-hour)
EP <11	2010 and earlier	6.0
	2011 and later	N/A
11 ≤ EP < 25	2010 and earlier	4.9
	2011 and later	N/A
25 ≤ EP <50	2010 and earlier	4.1
	2011 and later	N/A
50 ≤ EP <75	2010 and earlier	3.7
	2011 and later	N/A
75 ≤ EP <100	2010 and earlier	3.7
	2011 and later	N/A
100 ≤ EP < 175	2009 and earlier	3.7
	2010 and later	N/A
175 ≤ EP < 300	2008 and earlier	2.6
	2010 and later	N/A
300 ≤ EP < 600	2008 and earlier	2.6
	2009 and later	N/A
600 ≤ EP < 750	2008 and earlier	2.6
	2009 and later	N/A
EP ≥ 750	2007 and earlier	2.6
	2008 and later	N/A

I. Hydrocarbon Emissions

Pre-2007 model year internal combustion engines that have a displacement of less than 10 liters per cylinder and a maximum engine power rating greater than or equal to 175 horsepower shall not emit more than 1.0 gram of hydrocarbons per horsepower hour.

[40 CFR 60.4204(a) and 60.4205(a)]

J. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 60.4201(a) & (d), 60.4202(a) & (b), 60.4204(a), 60.4205(a), (b), & (c), 60.4206, 60.4207 (b), 60.4209(a) & (b), 60.4211(a) through (c), 60.4212, 60.4213, and 60.4214 (c) for the activities subject to this Section.

**XVIII. STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES SUBJECT TO NSPS
40 CFR 60 SUBPART JJJJ**

A. Applicability

This Section applies to stationary spark ignition (SI) internal combustion engines (ICE) subject to NSPS 40 CFR 60 Subpart JJJJ.

B. Operating Limitations

1. Fuel Limitations

The Permittee shall use only propane, liquefied petroleum gas, or natural gas in the SI ICE.

[PCC 17.12.180.A.2, -17.12.190.B, and 17.12.350.A.3.a]
[Material Permit Conditions are indicated by underline and italics]

2. Engine Importation

a. After July 1, 2010, the Permittee shall not install stationary SI ICE with a maximum engine power of less than 500 HP that does not meet the applicable requirements in 40 CFR 60.4233. [40 CFR 60.4236(a)]

b. After July 1, 2009, the Permittee shall not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that does not meet the applicable requirements in 40 CFR 60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that does not meet the applicable requirements in 40 CFR 60.4233 shall not be installed after January 1, 2010. [40 CFR 60.4236(b)]

c. For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), the Permittee shall not install an engine that do not meet the applicable requirements in 40 CFR 60.4233 after January 1, 2011. [40 CFR 60.4236(c)]

d. In addition to the requirements specified in 40 CFR 60.4231 and 60.4233, the Permittee shall not import any stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn liquefied petroleum gas SI ICE, and stationary gasoline SI ICE that does not meet the applicable requirements specified in Conditions XVIII.B.2.a, b, and c, after the date specified in such conditions. [40 CFR 60.4236(d)]

e. The requirements of this section do not apply to stationary SI ICEs that have been removed from one existing location and reinstalled at a new location. [40 CFR 60.4236(e)]

3. General Monitoring and Recordkeeping Requirements [PCC 17.12.180.A.3]

a. The Permittee shall maintain a record of the fuel sulfur content and lower heating value of the fuel.

b. *The Permittee shall install non-resettable hour meter on the SI ICE.*
[40 CFR 60.4237 and PCC 17.12.350.A.3.a]

c. By the 30th day of each month, the Permittee shall monitor and record the monthly and 12-month rolling hours of operation for all SI ICE subject to this section.

- d. The Permittee shall compute the monthly PM and PM₁₀ emission rate for the SI ICE subject to this Section according to the procedure specified in Condition XV.C.
- e. The Permittee shall compute the monthly SO₂ emission rate for the SI ICE according to the procedure specified in Condition XV.C.

C. Emission Limitations

1. The Permittee shall meet the emission standards in 40 CFR 60.4231(a) for any stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 by purchasing an engine that is certified to the emission standards and other requirements for new non-road SI engines in 40 CFR part 90. [40 CFR 60.4233(a)]
2. For any stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in 40 CFR 60.4230(a)(4) that is a rich burn engine that uses liquefied petroleum gas, the Permittee must comply with the emission standards in 40 CFR 60.4231(c) for the stationary SI ICE. The Permittee shall comply with the emission standards in 40 CFR 60.4231(c) by purchasing an engine that is certified to the emission standards and other requirements for new non-road SI engines included in 40 CFR 1048 or the Phase I emission standards and other requirements in 40 CFR 90.103 as applicable to the particular engine. The Permittee may purchase an SI ICE with a maximum engine power less than or equal to 40 HP with a total displacement less than or equal to 1000 cubic centimeters that is certified to the emission standards and other requirements for new non-road engines in 40 CFR 90. [40 CFR 60.4233(c)]
3. For any stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) the Permittee must comply with the emission standards for field testing in 40 CFR 1048.101(c) for any non-emergency stationary SI ICE and with the emission standards in Table 1 of 40 CFR 60 Subpart JJJJ for any emergency stationary SI ICE. For any stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) manufactured prior to January 1, 2011, that was certified to the standards in Table 1 of 40 CFR 60 Subpart JJJJ applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP, the Permittee may optionally choose to meet those standards. [40 CFR 60.4233(d)]
4. For any stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) the Permittee shall comply with the emission standards in Table 1 of 40 CFR 60 Subpart JJJJ for the stationary SI ICE by purchasing an engine that is certified to meet these standards. [40 CFR 60.4233(e)]
5. The Permittee shall operate and maintain stationary the SI ICE to achieve the emission standards applicable to the SI ICE. [40 CFR 60.4234]

D. Compliance Demonstration Requirements

[40 CFR 60.4243.a, b, d, e, f, and g]

1. The Permittee shall comply with the emission limitations by purchasing an engine that is certified to the emission standards in 40 CFR 60.4231(a) through (c), as applicable. The Permittee shall also meet the requirements as specified in 40 CFR Part 1068, subparts A through D, as they apply.
2. If the Permittee adjusts engine settings according to and consistent with the manufacturer's instructions, the stationary SI internal combustion engine will not be considered out of compliance.

3. The Permittee shall meet one of the following requirements:
 - a. If the Permittee operates and maintains the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the Permittee shall keep records of conducted maintenance to demonstrate compliance, but no performance testing is required.
 - b. If the Permittee does not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine, and the Permittee must demonstrate compliance according to 40 CFR 60.4243(a)(2)(i) through (iii), as appropriate.
4. If the Permittee is required to comply with the emission standards specified in 40 CFR 60.4233(d) or (e), the Permittee must demonstrate compliance according to one of the following methods:
 - a. Purchasing an engine certified according to procedures specified in 40 CFR 60 Subpart JJJJ, for the same model year and demonstrating compliance according to one of the methods specified in paragraph (a), above.
 - b. Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in 40 CFR 60.4233(d) or (e) and according to the requirements specified in 40 CFR 60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of 40 CFR 60.4243.
5. Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The Permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. For emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year is prohibited.
6. A stationary SI natural gas fired engines may operate using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but the Permittee must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the Permittee shall conduct a performance test to demonstrate compliance with the emission standards of 40 CFR 60.4233.

7. For any stationary SI internal combustion engine that is less than or equal to 500 HP and is non-certified engine or is certified but has not been operated and maintained according to the manufacturer's written emission-related instructions, the Permittee shall perform initial performance testing as indicated in 40 CFR 60.4243. The Permittee is not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).
8. It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller shall be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.
9. For any stationary SI internal combustion engine with maximum engine power greater than or equal to 500 HP that is manufactured after July 1, 2007 and before July 1, 2008, and must comply with the emission standards specified in sections 60.4233(b) or (c), the Permittee shall comply by one of the following methods:
 - a. Purchasing an engine certified according to 40 CFR Part 1048. The engine shall be installed and configured according to the manufacturer's specifications.
 - b. Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this permit condition and these methods must have been followed correctly.
 - c. Keeping records of engine manufacturer data indicating compliance with the standards.
 - d. Keeping records of control device vendor data indicating compliance with the standards.

E. Monitoring, Recordkeeping, and Reporting Requirements

[40 CFR 60.4245]

1. The Permittee shall keep records of the following:
 - a. All notifications submitted to comply with this permit condition and all documentation supporting any notification.
 - b. Maintenance conducted on the engine.
 - c. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR Parts 90 and 1048.
 - d. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that the engine meets the emission standards.

2. For all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the Permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the Permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the Permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.
3. For any stationary SI ICE greater than or equal to 500 HP that has not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231 the Permittee shall submit an initial notification as required in 40 CFR 60.7(a)(1). The notification must include the following:
 - i. Name and address of the Permittee;
 - ii. The address of the affected source;
 - iii. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - iv. Emission control equipment; and
 - v. Fuel used.
4. If a performance test is required to be conducted, the Permittee shall submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed.

F. Performance Testing

[40 CFR 60.4244]

Any required performance test shall be conducted in accordance with the procedures in paragraphs (a) through (f) of 40 CFR 60.4244.

G. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this Section shall be deemed compliance with 40 CFR 60.4236(a) through (e); 60.4237; 60.4233(a), (c), (d), (e); 60.4234; 60.4243(a), (b), (d), (e), (f), (g); 60.4244; and 60.4245, for the activities subject to this Section.

XIX. REQUIREMENTS FOR FUGITIVE DUST SOURCES

A. Applicability

This Section applies to all fugitive dust sources at the facility.

B. Open Areas, Roadways and Streets, Material Handling, Storage Piles

1. Emission Limitations/Standards

a. The Permittee shall not cause, allow or permit visible emissions from any fugitive dust source in excess of 20 % opacity measured in accordance with EPA Reference Method [PCC 17.16.050.B]

b. The Permittee shall employ at least one of the following listed “reasonable precautions” or any other method as proposed by the Permittee and approved by the Control Officer (following compliance with any applicable air permit revision mechanism), to prevent excessive amounts of particulate matter from becoming airborne:

i. Use dust suppressants or soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, or barring access when constructing, using, altering, repairing, demolishing, clearing, or leveling a building or its appurtenances, a driveway, a parking area, or a vacant lot, or when moving or excavating earth.
In addition to the above, the following have been identified as reasonable precautions:

Applying wetting agents, stemming, optimizing blast pattern, controlling oxygen balance of explosives during blast operations, minimize material drop height, temporary paving, road cover, controlling vehicle access, limiting vehicle speed, revegetation, hydro-seeding, hydro-mulching, mulching, wet sweeping, vacuuming, wind fence, wind break, shrouding, skirting, enclosing, contouring, animals, soil adhesives, compaction, agglomeration, inherent moisture content, and encrustation.

[PCC 17.16.080.A]

ii. Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means. [PCC 17.16.080.B]

iii. Apply temporary paving, dust suppressants, wetting down, or detouring when using, repairing, constructing, or reconstructing a roadway.
In addition to the above, the following have been identified as reasonable precautions:

Applying wetting agents, controlling vehicle access, limiting vehicle speed, revegetation, hydro-seeding, hydro-mulching, mulching, landscaping, wet sweeping, vacuum, wind fence, wind break, covering, contouring, usage of soil adhesives, usage of soil stabilizers, compaction, usage of decomposed granite, agglomeration, inherent moisture content, and encrustation.

[PCC 17.16.090.A]

- iv. Apply dust suppressants, wetting, or cover the load when transporting materials likely to give rise to airborne dust.

In addition to the above, the following have been identified as reasonable precautions:

Applying wetting agents, minimizing material drop height, limiting vehicle speed, wind break, covering, agglomeration, and encrustation.

[PCC 17.16.090.G]

- v. Use spray bars, wetting, wetting agents, dust suppressants, covers, or hoods when crushing, screening, handling, transporting, or conveying material that is likely to result in significant amounts of airborne dust.

In addition to the above, the following have been identified as reasonable precautions:

Minimizing material drop height, wind fence, wind break, shrouding, skirting, enclosing, contouring, and agglomeration.

[PCC 17.16.100]

- vi. Use chemical stabilization, wetting, or covering when stacking, piling or otherwise storing organic or inorganic dust-producing material.

In addition to the above, the following have been identified as reasonable precautions:

Wind fence, wind break, shrouding, skirting, enclosing, covering, contouring, agglomeration, and encrustation.

[PCC 17.16.110.A]

- vii. Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents. In addition to the above, the following have been identified as reasonable precautions:

Wetting, wind fence, wind break, shrouding, skirting, enclosing, covering, contouring, and agglomeration.

[PCC 17.16.110.B]

- viii. Use wetting, chemical stabilization, or revegetation when constructing mineral tailing piles.

In addition to the above, the following have been identified as reasonable precautions:

Applying wetting agents, maximizing the wet surface area, barring or controlling vehicle access, limiting vehicle speed, hydro-seeding, hydro-mulching, mulching, landscaping, wind fence, wind break, covering, contouring, animals, soil adhesives, soil stabilizers, compaction, usage of decomposed granite, agglomeration, and encrustation.

[PCC 17.16.120]

- ix. At a minimum, the following measures at the Tailing Impoundment shall be employed in order to achieve the requirements of PCC 17.16.120:
- 1) New tailing dam roads, constructed as part of pipeline raises, shall be capped with native dirt. Heavily traveled perimeter roads shall be treated with a dust suppressant, as necessary.
 - 2) Active berms and construction areas shall be sprayed with water, as necessary.
 - 3) The wet dam construction method shall be used to control the surface of the impoundment, maintaining the majority of the impoundment surface wet or encrusted, while the remaining area is under construction.
 - 4) After heavy rainfall events (sufficient to cause surface runoff and flushing of natural dust suppressing surface salts) if the upper most layer becomes susceptible to wind erosion, the Permittee shall implement and document additional control measures.
[Order of Abatement A-174-97]

- x. Use wetting agents or dust suppressants before the cleaning of any site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means. In addition to the above, the following have been identified as reasonable precautions:

Wetting, chip seal, gravel, temporary paving, controlling vehicle access, limiting vehicle speed, revegetation, inherent moisture content, and hydro-seeding.

[PCC 17.16.470.B and PCC 17.16.070 through 110]

- c. The Permittee shall prohibit the following activities without the use of dust minimization techniques as described in the previous condition.
- i. Driving over unpaved roads or vacant areas
 - ii. Excavation, construction, demolition, earth moving, land clearing or leveling

[PCC 17.16.070 through 110]

2. Air Pollution Control Requirements

Water, or an equivalent control, shall be used to control visible emissions from haul roads and storage piles.

[PCC 17.12.180.A.2 and 17.12.350.A.3.d]

[Material Permit Conditions are indicated by underline and italics]

3. Monitoring, Reporting, and Recordkeeping

- a. The Permittee shall maintain records of the dates on which any of the activities listed in Conditions XIX.B.1.b.i through XIX.B.1.b.x were performed and control measures employed. In lieu of maintaining such records, the Permittee may maintain the Fugitive Source Monitoring Plan (Condition XIX.B.3.b) as a means of monitoring and recordkeeping to assure the implementation of dust control measures. [PCC 17.12.180.A.3.c]

- b. The Permittee shall maintain a Fugitive Source Monitoring Plan as a means of monitoring and recordkeeping to demonstrate that reasonable precautions to prevent particulate emissions were employed.

[PCC 17.12.180.A.3.c]

- i. The Fugitive Source Monitoring Plan shall describe the methods the Permittee shall use to comply with the requirements of this condition. The plan shall contain the following minimum elements:

- (1) A list of the fugitive emission sources with each source's applicable opacity limit.
- (2) Identification of a central lookout station or multiple observation points, as appropriate, from where the fugitive sources shall be monitored. When multiple observation points are used all of the fugitive sources associated with each observation point shall be specifically identified within the observation plan.
- (3) Types of control measures employed on an activity-specific basis;
- (4) Frequency of application of control measures; and
- (5) A system for documenting variations from the strategy outlined in the Fugitive Source Monitoring Plan.

[PCC 17.12.180.A.3.c]

- ii. The Permittee shall maintain a Tailing Dam Dust Control Management Plan (this may be part of the Fugitive Source Monitoring Plan) containing the following elements:

- (1) A description of the reasonable precautions used to control fugitive dust emissions from the tailing impoundment, including but not limited to the following:
 - Use of the "wet dam" construction method
 - Berm construction techniques to minimize dust emissions
 - New tailing dam roads shall be capped with native soil and routinely watered as soon as practicable
 - Heavily traveled perimeter roads shall be treated with dust suppressant (e.g., magnesium chloride)
 - Re-vegetation techniques to be used for surface stabilization where practical
 - After heavy rainfall events (sufficient to cause surface runoff and flushing of natural dust suppressing surface salts) if the upper most layer becomes susceptible to wind erosion, the Permittee shall implement and document additional control measures.
- (2) Semiannual inspections to identify signs of fatigue on surface crusts and areas that are susceptible to high wind events. Results of the inspections shall be used to determine the need for additional dust control measures.
- (3) Contingency plan to address dust suppression system problems
- (4) Records needed to support the management plan

(5) Semi-annual review of the Tailing Dam Dust Control Management Plan

[PCC 17.12.180.A.3.c]

iii. If the Permittee relies on “inherent moisture content” as a reasonable precaution for minimizing particulate emissions caused by traffic over haul roads, the dates of the period for which this control measure was used shall be recorded.

[PCC 17.12.180.A.3.c]

iv. The Permittee may add any of the listed “reasonable precautions” to the list of control methods identified in the Fugitive Source Monitoring Plan or Tailing Dam Dust Control Management Plan. Such changes shall be recorded, and a notification shall be sent to the Control Officer within 10 days following the change. In addition, the Permittee may add any method approved hereafter by the Control Officer to be a “reasonable precaution: to the list of control methods identified in the Fugitive Monitoring Plan or Tailing Dam Dust Control Management Plan by complying with the applicable permitting mechanism if a permit revision is required, and in any other case by recording the change, and providing a notification to the Control Officer within 10 days following the change.

[PCC 17.12.180.A.3.c]

c. The Permittee shall complete the Tailings Impoundment Environmental Activities Report weekly. This report shall include, when applicable, the current area of tailings deposition, the number of loads applied for each water truck, location of cattle which are part of the Holistics Resource Management plan, the areas of hydroseeding, and the areas of chemical dust suppressant application. On a semiannual basis, the report shall include any recommendations for improving dust management at the Tailings Impoundment based on the results of a semiannual checklist audit of compliance with the measures specified in Condition XIX.B.1.

[PCC 17.12.180.A.3.c]

d. Weekly Monitoring Requirement

[PCC 17.12.180.A.3.c]

A certified Method 9 observer shall conduct weekly visible emissions observations of fugitive sources and the Tailing Impoundment.

i. If the observer, during the weekly visual survey, does not observe any plume from any fugitive source that on an instantaneous basis appears to exceed the opacity standard, then the observer shall keep a record of the name of the observer, the date on which the observation was made, and the results of the observation.

ii. If the observer sees visible emissions from a fugitive source that on an instantaneous basis appears to exceed the opacity standard, then the observer shall if practicable take a six-minute Method 9 observation of the plume.

iii. If the six-minute opacity of the plume is less than the opacity standard, the observer shall make a record of the following:

(1) Location, date, and time of the observation; and

(2) The results of the Method 9 observation.

Compliance with the conditions of this Section shall be deemed compliance with PCC 17.16.080.A, PCC 17.16.090, PCC 17.16.100, PCC 17.16.110, PCC 17.16.120, PCC 17.16.130.B, PCC 17.16.470, PCC 17.16.050.B, and PCC 17.16.70 through 110 for the activities subject to this Section.

XX. REQUIREMENTS FOR OTHER PERIODIC ACTIVITIES

A. Abrasive Blasting

Particulate Matter and Opacity Standards

1. Emission Limitation/Standards

- a. The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include:

- i. Wet blasting;
- ii. Effective enclosure with necessary dust collecting equipment;
- iii. Use of slag products; or
- iv. Any other method approved by the Control Officer.

[PCC 17.16.100.D]

b. Opacity Limitations

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any sandblasting or other abrasive blasting operations, opacity of greater than 20%.

[PCC 17.16.130.B.3]

2. Monitoring and Recordkeeping Requirement

[PCC 17.12.180.A.3.c]

Each time an abrasive blasting project is conducted, the Permittee shall log in ink or in an electronic format, a record of the following:

- a. The date the project was conducted;
- b. The duration of the project; and
- c. Type of control measures employed.

3. Permit Shield

[PCC 17.12.310]

Compliance with the conditions of this part shall be deemed compliance with the following requirements as of the date of issuance of this permit: PCC 17.16.130.B.3 and A.A.C. R18-2-726.

B. Use of Paints

1. Volatile Organic Compound Standards

a. Emissions Limitations/Standards

While performing spray-painting operations, the Permittee shall comply with the following requirements:

i. The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray. [PCC 17.16.400.C.1]

ii. The Permittee shall not either:

(1) Employ, apply, evaporate, or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or

(2) Thin or dilute any architectural coating with a photochemically reactive solvent. [PCC 17.16.400.C.2]

iii. For the purposes of Conditions XX.B.1.a.ii, a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Conditions XX.B.1.a.iii.1 through XX.B.1.a.iii.3 below, or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent: [PCC 17.16.400.C.3]

(1) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation-hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: 5 percent.

(2) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent.

(3) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

iv. Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in Conditions XX.B.1.a.iii.1 through XX.B.1.a.iii.3 above, it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents. [PCC 17.16.400.C.4]

b. Monitoring and Recordkeeping Requirements

i. Each time a spray painting project is conducted, the Permittee shall keep a record of the following:

(1) The date the project was conducted;

- (2) The duration of the project;
 - (3) Type of control measures employed, if any;
 - (4) Material Safety Data Sheets for all paints and solvents used in the project; and
 - (5) The amount of paint consumed during the project.
- ii. Spot painting projects shall be exempt from the recordkeeping requirements of Condition **XX.B.1.b.i** above. [PCC 17.12.180.A.3.c]
- c. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this part shall be deemed compliance with the PCC 17.16.400.C as of the date of issuance of this permit.

C. Demolition/Renovation

Hazardous Air Pollutants Standards

1. Emissions Limitation/Standard

The Permittee shall comply with all of the requirements of 40 CFR Part 61 Subpart M (National Emissions Standards for Hazardous Air Pollutants - Asbestos). [PCC 17.16.530.A.8]

2. Monitoring and Recordkeeping Requirement [PCC 17.12.180.A.3.c]

The Permittee shall keep all required records in a file. The required records shall include the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents.

3. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this Part shall be deemed compliance with PCC 17.16.530.A.8 as of the date of issuance of this permit.

D. Open Burning

1. Emission Limitations/Standards [PCC 17.12.480]

Except as provided in PCC 17.12.480.C (1), C (3), and C (4), and except when permitted to do so by PDEQ, the Permittee shall not conduct open burning.

2. Monitoring, Recordkeeping, and Reporting Requirements [PCC 17.12.180.A.3.c]

The Permittee shall maintain copies of all open burning permits readily available for inspection on file.

3. Permit Shield [PCC 17.12.310]

Compliance with the conditions of this Part shall be deemed compliance with PCC 17.12.480 as of the date of issuance of this permit.

XXI. MOBILE SOURCES

- A.** The requirements of this Section are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or are agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in PCC 17.04.340(174).
[PCC 17.16.450]

B. Emission Limitations/Standards for Roadway and Site Cleaning Machinery

The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.
[PCC 17.16.470.A]

C. Permit Shield

[PCC 17.12.310]

Compliance with this condition shall be deemed compliance with PCC 17.16.450 and PCC 17.16.470(A) for the activities subject to this Part.

XXII. NONVEHICLE AIR CONDITIONER MAINTENANCE AND/OR SERVICES

A. Emission Limitations/Standards

[40 CFR 82, Subpart F]

The Permittee shall comply with the applicable requirements of 40 CFR 82 - Subpart F (Protection of Stratospheric Ozone - Recycling and Emissions Reduction).

B. Monitoring, Recordkeeping, and Reporting Requirements

[PCC 17.12.180.A.3.c]

The Permittee shall keep all records required by the applicable requirements of 40 CFR 82 - Subpart F in a file.

XXIII. GENERAL REQUIREMENTS for NONMETALLIC MINERAL PROCESSES SUBJECT TO 40 CFR 60 SUBPART OOO

A. Applicability

[40 CFR 60.382]

The provisions of this section are applicable to the NSPS Road Rock Crushing Plant (Source ID 093) identified in Attachment "C" of this permit.

B. Notification Requirements

1. A notification of the actual date of initial startup of each affected facility shall be submitted to the Control Officer
2. For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the Permittee to the Control Officer. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.
[40 CFR 60.676(i)(1)]

C. Emission Limits and Standards

1. Particulate Matter & Opacity Standards

- a. Within 60 days after achieving the maximum production rate, at which the affected facility will be operated, but not later than 180 days after initial startup, the Permittee shall not cause to be discharged into the atmosphere any fugitive emissions which exhibit: [40 CFR 60.672(b) and PCC 17.12.350.A.3.f]

[Material permit conditions are indicated by underline and italics]

- i. Greater than 12 percent opacity from crusher constructed on or after April 22, 2008.
- ii. Greater than 7 percent opacity from affected facilities other than crushers, constructed after April 22, 2008.

- b. Movable vehicle (trucks, front end loaders, skip hoist, railcars, etc) dumping of nonmetallic minerals into any screening operation, feed hopper or crusher is exempt from the requirements of this section

[40 CFR 60.672(d)]

2. Operation and Maintenance Requirement

At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

[Table 1 to Subpart OOO & 40 CFR 60.11(d) & PCC 17.16.020.A]

[Material permit conditions are indicated by underline and italics]

D. Monitoring Requirements

[PCC 17.12.185.A.3]

1. The Permittee shall conduct opacity monitoring for non-fugitive emission units associated with Source ID 093 in accordance with Condition II.I of this permit. The Permittee shall conduct opacity monitoring for fugitive emission units associated with Source ID 093 in accordance with condition B.3.d, section XIX of this permit.
2. The Permittee shall compute the monthly non-fugitive source PM emission rate for the conveyor transfer points of Source ID 093 as the product of the monthly production weight and 0.000092 pounds PM per ton of material processed. The Permittee shall compute the monthly PM₁₀ emission rate by assuming that PM and PM₁₀ emissions are equal unless otherwise demonstrated.
3. To assure compliance with the opacity limitations in condition C.1.a of this section XXIII, the Permittee shall observe fugitive sources at least once a day while the plant is operating. If the observer sees a plume that, on an instantaneous basis, appears to exceed the applicable opacity, or the emissions are crossing property boundaries, then the Permittee shall, if practical, conduct an EPA Method 9. If the results exceed the applicable opacity, this shall be recorded and reported as an excess emission and a permit deviation.

[PCC 17.1.185.A.3]

4. To assure compliance with the opacity limitation in condition C.1.a of this section XXIII, the Permittee shall perform monthly periodic inspections to check that water is flowing to facility's discharge spray nozzles supplying wet suppression. Corrective action must be initiated within 24 hours and completed as expeditiously as practical.

5. For affected facilities without direct wet suppression, the Permittee may designate an upstream water spray providing carryover wet suppression to the affected facility and perform these same monthly nozzle inspections to avoid periodic testing required in condition G.2 of this section XXIII. The designation must be made during the initial performance testing.
[40 CFR 60.674(b)(1)]
6. The Permittee shall keep daily road rock crushing production records (Source ID 093) used to produce monthly production totals. A rolling, twelve-month total of production tonnage will be created and updated monthly.
7. Once per day during operations, the Permittee shall check all operations (Source ID 093) for evidence of abnormal emissions. The Permittee shall record the date and time of such a check, the name of the inspector, and the results of the inspection indicating if abnormal emissions were observed and, if so, the type of corrective action taken. The Permittee shall initiate corrective action within 24 hours and complete corrective action as expediently as practical if it is found that water is not flowing properly during an inspection of the water spray nozzles.
[40 CFR 60.674(b)]
8. The PM emission rate for each source shall be expressed as tons per month and shall be used in conducting the calculations of Condition II.K.2.a of this permit.
9. The Permittee shall perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The Permittee shall initiate corrective action within 24 hours and complete corrective action as expediently as practical if it is found that water is not flowing properly during an inspection of the water spray nozzles. The Permittee shall record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under Condition D.9 of this section XXIII.
[40 CFR 60.674(b)]
 - a. If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Table 3 of 40 CFR 60 Subpart OOO, provided the criteria of Conditions D.9.a (i & ii) of this section XXIII are met.
[40 CFR 60.674(b)(1)]
 - i. The Permittee conducts periodic inspections of the upstream water spray(s) that are responsible for controlling fugitive emissions from the affected facility. These inspections shall be conducted according to conditions D.9 and D.10 of this section XXIII.
[40 CFR 60.674(b)(1)(i)]
 - ii. The Permittee shall designate which upstream water spray(s) will be periodically inspected at the time of the initial performance test required by 40 CFR 60.11 and Condition G of this section XXIII.
[40 CFR 60.674(b)(1)(ii)]
 - b. If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry required under condition D.10 of this section XXIII must specify the control mechanism being used instead of the water sprays.
[40 CFR 60.674(b)(2)]

10. The Permittee shall record each periodic inspection required under condition D.9 of this section XXIII including dates and any corrective actions taken, in a logbook (in written or electronic format). The Permittee shall keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Control Officer upon request.
[40 CFR 60.674(b)(1)]

E. Recordkeeping Requirements

1. The Permittee shall record all monitoring results including EPA reference Method 9 observations, excess emissions and permit deviations. Records of such checks shall include, at a minimum:
 - a. The date and time of the check;
 - b. The name of the person conducting the check;
 - c. The particular piece of equipment or area being observed; and,
 - d. The results of the check to include whether excessive emissions were observed. If excessive emissions were observed, the record shall include corrective action taken and the results of the required follow-up opacity test.
2. The Permittee shall record each inspection of water spray nozzles, including the date of each inspection and any corrective actions taken, in a written or electronic logbook. The logbook must be kept onsite and made available to PDEQ inspectors.
[40 CFR 60.676(b)]
3. If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry must specify the control mechanism being used instead of the water sprays.
[40 CFR 60.674(b)(2)]
4. The Permittee shall maintain a record of the rolling total production detailed in condition D.6 of this section XXIII.
[PCC 17.12.180.A.4]

F. Reporting Requirements

1. Performance Tests

- a. The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in condition C.1.a of this section XXIII.
[40 CFR 60.676(f)]
- b. The reports shall be received no later than four weeks after completion of the test.
[Arizona Testing Manual for Air Pollutant Emissions, Revision F, March 1992, Page 8, 1.4.3]

2. Notification Requirement

The Permittee shall furnish the Control Officer written notification or, if acceptable to both the Control Officer and the Permittee, electronic notification, as follows:

- a. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted. This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Control Officer may request additional relevant information subsequent to this notice. [40 CFR 60.7(a)(4)]
- b. When an existing facility is replaced by a piece of equipment of equal or smaller size, having the same function as the existing facility, and there is no increase in the amount of emissions, the following capacities must be submitted to Control Officer for both the replaced equipment and the replacement equipment: [40 CFR 60.676(a)]
 - i. Tons per hour;
 - ii. For a screening operation, the total surface area of screen tops;
 - iii. For a conveyor belt, the width of conveyor belts;
 - iv. For a storage bin, the rated capacity (tons) of the storage bins
- c. Any screening operation, bucket elevator, or belt conveyor that processes saturated material and subsequently processes unsaturated materials, shall be reported by Permittee to the Control Officer within 30 days following such change. At the time of such change, the screening operation, bucket elevator, or belt conveyor becomes subject to the applicable opacity limit in condition C.1.a of this section XXIII and the collateral Monitoring, Recording keeping, Reporting and Testing requirements in this section XXIII. [40 CFR 60.676(g)]

G. Testing Requirements

1. Facilities without water spray nozzles, having commenced construction, modification or reconstruction on or after April 22, 2008, shall be performance tested again within 5 years from the previous performance test for fugitive emissions. Affected facilities controlled by water carryover from upstream water sprays, that have been declared and inspected according to condition D.9.a of this section XXIII, are exempt from this 5-year repeat testing requirement. [40 CFR 60.674(b)(1) & 40 CFR 60 Table 3 of Subpart OOO]
2. In determining compliance with the opacity and particulate matter standards in condition C of this section XXIII, the Permittee shall use Method 9 and the procedures in 40 CFR 60.11, with the following additions: [40 CFR 60.675(c)(1)]
 - a. The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
 - b. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9 of Appendix A-4 of 40 CFR 60, Section 2.1) must be followed

- c. For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.
3. When determining compliance with the fugitive emissions standards under condition C of this section XXIII, the duration of the Method 9 observations shall be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits shall be based on the average of the five 6-minute averages. [40 CFR 60.675(c)(3)]
4. The Permittee may use the following as alternatives to the reference methods and procedures specified in condition G of this section XXIII: [40 CFR 60.675(e)]
- a. For the method and procedure of condition G.2 of this section XXIII, if the emissions from two or more facilities continuously interfere so that the opacity of the fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
- i. Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.
- ii. Separate the emissions so that the opacity of emissions from each affected facility can be read.
- b. A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met:
- i. No more than three emission points may be read concurrently.
- ii. All three emission points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points
- iii. If an opacity reading for any one of the three emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.
5. For performance tests involving only Method 9 testing, the Permittee may reduce the 30-day advance notification of performance test in 40 CFR 60.7(a)(6) and 60.8(d) to a 7-day advance notification. [40 CFR 60.675(g)]
6. Conditions of Performance Testing
- a. Performance tests shall be conducted under such conditions as the Control Officer shall specify to the plant operator based on representative performance of the affected facility. The Permittee shall make available to the Control Officer such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. [40 CFR 60.8(c)]

- b. The owner or operator of an affected facility shall provide the Control Officer at least seven (7) days prior notice of any performance test, except as specified under other subparts, to afford the Control Officer the opportunity to have an observer present. If there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Control Officer as soon as possible of any delay in the original test date, either by providing at least seven (7) days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Control Officer (or delegated State or local agency) by mutual agreement.

[40 CFR 60.8(d) & 40 CFR 675(g)]

- c. Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in condition G.7 of this section XXIII. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Control Officer's approval, be determined using the arithmetic mean of the results of the two other runs.

[40 CFR 60.8(f)]

ATTACHMENT C

EQUIPMENT LIST

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
<i>SECTION I: MINING OPERATIONS</i>							
088	Drilling Operations			N	N	N	
089	Ammonium Nitrate Storage			N	N	N	
066	Blasting Operations			N	N	N	
097	Haul Truck Loading and Dumping			N	N	N	
077	Unpaved Roads			N	N	N	
<i>SECTION II: PRIMARY CRUSHING</i>							
113	Primary Crusher 6A and associated feed belts	5000 tph	1996	Y	N	Y	Svedala Mark II
	Primary Crusher 6B and associated feed belts	5000 tph	1996	Y	N	Y	Svedala Mark II
	6A Cartridge Dust Collector	20,000 acfm	2012	Y	N	Y	FARR GS72 Cartridge Dust Collector
	6B Cartridge Dust Collector	20,000 acfm	2012	Y	N	Y	FARR GS72 Cartridge Dust Collector
<i>SECTION III: OVERLAND ORE CONVEYING</i>							
095	Sierrita A2 to A3 Conveyor Transfer		1976	N	Y	N	
072	A3 Stacker to Sierrita Coarse Ore Stockpile		1968	N	Y	N	
069	Sierrita B2 to B3 Conveyor Transfer		1976, 1981	N	Y	N	
096	Sierrita B3 Conveyor to B4 Stacker Transfer		1967, 1981	N	Y	N	
102	B4 Stacker to Sierrita Coarse Ore Stockpile		1967	N	Y	N	Stephen-Adamson 60"

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
<i>SECTION IV: FINE ORE CRUSHING – SECONDARY AND TERTIARY CRUSHING</i>							
201	#1 Secondary Crushing Line						
	#1 Coarse Ore Reclaim Belt (Apron Feeder)	NA	1968	Y	N	Y	NA
	#1 Coarse Ore Reclaim Feeders (2 Feeders – North and South)	NA	1968	Y	N	Y	NA
	#1 Scalping Screen	2,124 tph	2010	Y	N	Y	Ludowici 10'x20' DD Screen
	8A Conveyor Belt (fugitive emissions pick up on conveyor belt)	NA	1968	Y	N	Y	NA
	#1 Secondary Crusher (emissions pick-up from discharge screen)	1,234	2009	Y	N	Y	Sandvik H8800 Crusher
	#1 Secondary Discharge Screen	1,234	2010	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #1 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #1 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
	#1 Secondary Dust Collector	40,500 acfm	2009	Y	N	Y	FARR GS72 Cartridge Dust Collector
	#2 Secondary Crushing Line						
	#2 Coarse Ore Reclaim Belt (Apron Feeders)	NA	1968	Y	N	Y	NA
	#2 Coarse Ore Reclaim Feeders (2 Feeders – North and South)	NA	1968	Y	N	Y	NA
	#2 Scalping Screen	2,124 tph	2007	Y	N	Y	Ludowici 10'x20' DD Screen
	8A Conveyor Belt (fugitive emissions pick up on conveyor belt)	NA	1968	Y	N	Y	NA
202	#2 Secondary Crusher (emissions pick-up from discharge screen)	1,234	2008	Y	N	Y	Sandvik H8800 Crusher
	#2 Secondary Discharge Screen	1,234	2007	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #2 Secondary Discharge Screen)	NA	2009 – 1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #2 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
	#2 Secondary Dust Collector – Vented Indoors	40,500 acfm	2008	Y	N	Y	FARR GS72 Cartridge Dust Collector

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
203	#3 Secondary Crushing Line						
	#3 Coarse Ore Reclaim Belt (Apron Feeder)	NA	1968	Y	N	Y	NA
	#3 Coarse Ore Reclaim Feeders (2 Feeders – North and South)	NA	1968	Y	N	Y	NA
	#3 Scalping Screen	2,124 tph	2010	Y	N	Y	Ludowici 10'x20' DD Screen
	8A Conveyor Belt (fugitive emissions pick up on conveyor belt)	NA	1968	Y	N	Y	NA
	#3 Secondary Crusher (emissions pick-up from discharge screen)	1,234	2010	Y	N	Y	Sandvik H8800 Crusher
	#3 Secondary Discharge Screen	1,234	2010	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #3 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #3 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
#3 Secondary Dust Collector	40,500 acfm	2010	Y	N	Y	FARR GS72 Cartridge Dust Collector	
204	#4 Secondary Crushing Line						
	#4 Coarse Ore Reclaim Belt (Apron Feeder)	NA	1968	Y	N	Y	NA
	#4 Coarse Ore Reclaim Feeders (2 Feeders – North and South)	NA	1968	Y	N	Y	NA
	#4 Scalping Screen	2,124 tph	2011	Y	N	Y	Ludowici 10'x20' DD Screen
	8A Conveyor Belt (fugitive emissions pick up on conveyor belt)	NA	1968	Y	N	Y	NA
	#4 Secondary Crusher (emissions pick-up from discharge screen)	1,234	2011	Y	N	Y	Sandvik H8800 Crusher
	#4 Secondary Discharge Screen	1,234	2011	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #4 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #4 Secondary Discharge Screen)	NA	1968	Y	N	Y	NA
#4 Secondary Dust Collector	40,500 acfm	2011	Y	N	Y	FARR GS72 Cartridge Dust Collector	

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
301	#1 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#1 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#1 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2009	Y	N	Y	Sandvik Hydrocone C880 Crusher
	#1 Tertiary Discharge Screen	614 tph	2010	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #1 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #1 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#1 Tertiary Dust Collector	27,500 acfm	2009	Y	N	Y	FARR GS48 Cartridge Dust Collector	
302	#2 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#2 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#2 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2004	Y	N	Y	Sandvik Hydrocone H8800
	#2 Tertiary Discharge Screen	614 tph	2004	Y	N	Y	Svedala 10'x20'
	7B Conveyor Belt (emissions pick-up on belt from #2 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #2 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#2 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	
303	#3 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#3 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#3 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2011	Y	N	Y	Sandvik Hydrocone H8800 Crusher
	#3 Tertiary Discharge Screen	614 tph	2011	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #3 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
8B Conveyor Belt (emissions pick-up on belt from #3 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA	
#3 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	
304	#4 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#4 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#4 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2004	Y	N	Y	Sandvik Hydrocone H8800
	#4 Tertiary Discharge Screen	614 tph	2004	Y	N	Y	Svedala 10'x20'
	7B Conveyor Belt (emissions pick-up on belt from #4 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #4 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#4 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
305	#5 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#5 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#5 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2011	Y	N	Y	Sandvik Hydrocone H8800 Crusher
	#5 Tertiary Discharge Screen	614 tph	2011	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #5 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #5 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#5 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	
306	#6 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#6 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#6 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2011	Y	N	Y	Sandvik Hydrocone H8800 Crusher
	#6 Tertiary Discharge Screen	614 tph	2011	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #6 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #6 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#6 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	
307	#7 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#7 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#7 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2012	Y	N	Y	Sandvik Hydrocone H8800 Crusher
	#7 Tertiary Discharge Screen	614 tph	2012	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #7 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #7 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#7 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
308	#8 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#8 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#8 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	1999	Y	N	Y	Svedala Hydrocone H8000
	#8 Tertiary Discharge Screen	614 tph	2004	Y	N	Y	Svedala 10'x20'
	7B Conveyor Belt (emissions pick-up on belt from #8 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #8 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
309	#9 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#9 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#9 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2012	Y	N	Y	Sandvik Hydrocone H8800 Crusher
	#9 Tertiary Discharge Screen	614 tph	2012	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #9 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #9 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#9 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	
310	#10 Tertiary Crushing Line						
	Coarse Ore Bin	NA	1968	Y	N	Y	NA
	#10 Tertiary Crusher Feeder Belt	NA	1968	Y	N	Y	NA
	#10 Tertiary Crusher (emissions pick-up from discharge screen)	614 tph	2012	Y	N	Y	Sandvik Hydrocone H8800 Crusher
	#10 Tertiary Discharge Screen	614 tph	2012	Y	N	Y	Ludowici 10'x20' Screen
	7B Conveyor Belt (emissions pick-up on belt from #10 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
	8B Conveyor Belt (emissions pick-up on belt from #10 Tertiary Discharge Screen)	NA	1968	Y	N	Y	NA
#10 Tertiary Dust Collector	27,500 acfm	2011	Y	N	Y	FARR GS48 Cartridge Dust Collector	
311	Conveyor Transfer Points						
	7A/7B Conveyor Transfer Point	NA	2004	Y	N	Y	NA
	7C Head Pulley	NA	1968	Y	N	Y	NA
	8D/8B Conveyor Transfer Point	NA	1968	Y	N	Y	NA
	CTP Dust Collector	30,000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
312	Fine Ore Transfer Building						
	7B/7C Conveyor Transfer Point	NA	1968	Y	N	Y	NA
	7C Conveyor Belt	NA	1968	Y	N	Y	NA
	Transfer House Dust Collector	30,000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
<i>SECTION V: FINE ORE STORAGE AND HANDLING</i>							
	Sierrita Fine Ore Bin						
	Fine Ore Bin & Tripper Conveyor	70,000 tons	1968	N	N	Y	
	8B/8C Conveyor Transfer Point		1968	N	N	Y	
009	#1 FARR - Sierrita Fine Ore Bin	10,500 acfm	2010	Y	N	Y	FARR Cartridge Dust Collector
010	#2 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
011	#3 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
012	#4 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
013	#5 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
014	#6 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
015	#7 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
016	#8 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
017	#9 FARR - Sierrita Fine Ore Bin	3000 acfm	2012	Y	N	Y	FARR Cartridge Dust Collector
	#0-#15 Mill Feed Belt System						
	#0 Fine Ore Feeder Belts (3ea.)		1970	N	N	N	SI 503342000-1-2-3
	# 0 Mill Collector Belt		1970	N	N	N	SI 501912000
	# 0 Mill Feed Conveyor		1970	N	N	N	SI 501913000
	# 0 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654000
	# 1 Fine Ore Feeder Belts (3 ea.)		1968	N	N	N	SI 503342001 -1 -2 -3
	# 1 Mill Feed Conveyor		1968	N	N	N	SI 501913001
	# 1 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654001
	# 2 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342002 - 1 - 2 - 3 - 4
	# 2 Mill Collector Belt		1968	N	N	N	SI 501912002
	# 2 Mill Feed Conveyor		1968	N	N	N	SI 501913002
	# 2 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654002
	# 3 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342003 - 1 - 2 - 3 - 4
	# 3 Mill Collector Belt		1968	N	N	N	SI 501912003
	# 3 Mill Feed Conveyor		1968	N	N	N	SI 501913003
	# 3 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654003
	# 4 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342004 - 1 - 2 - 3 - 4
	# 4 Mill Collector Belt		1968	N	N	N	SI 501912004
	# 4 Mill Feed Conveyor		1968	N	N	N	SI 501913004
	# 4 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654004

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
023	# 5 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342005 - 1 - 2 - 3 - 4
	# 5 Mill Collector Belt		1968	N	N	N	SI 501912005
	# 5 Mill Feed Conveyor		1968	N	N	N	SI 501913005
	# 5 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654005
024	# 6 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342006 - 1 - 2 - 3 - 4
	# 6 Mill Collector Belt		1968	N	N	N	SI 501912006
	# 6 Mill Feed Conveyor		1968	N	N	N	SI 501913006
	# 6 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654006
025	# 7 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342007 - 1 - 2 - 3 - 4
	# 7 Mill Collector Belt		1968	N	N	N	SI 501912007
	# 7 Mill Feed Conveyor		1968	N	N	N	SI 501913007
	# 7 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654007
026	# 8 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342008 - 1 - 2 - 3 - 4
	# 8 Mill Collector Belt		1968	N	N	N	SI 501912008
	# 8 Mill Feed Conveyor		1968	N	N	N	SI 501913008
	# 8 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654008
027	# 9 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342009 - 1 - 2 - 3 - 4
	# 9 Mill Collector Belt		1968	N	N	N	SI 501912009
	# 9 Mill Feed Conveyor		1968	N	N	N	SI 501913009
	# 9 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654009
028	# 10 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342010 - 1 - 2 - 3 - 4
	# 10 Mill Collector Belt		1968	N	N	N	SI 501912010
	# 10 Mill Feed Conveyor		1968	N	N	N	SI 501913010
	# 10 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654010
029	# 11 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342011 - 1 - 2 - 3 - 4
	# 11 Mill Collector Belt		1968	N	N	N	SI 501912011
	# 11 Mill Feed Conveyor		1968	N	N	N	SI 501913011
	# 11 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654011
030	# 12 Fine Ore Feeder Belts (4 ea.)		1968	N	N	N	SI 503342012 - 1 - 2 - 3 - 4
	# 12 Mill Collector Belt		1968	N	N	N	SI 501912012
	# 12 Mill Feed Conveyor		1968	N	N	N	SI 501913012
	# 12 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654012
031	# 13 Fine Ore Feeder Belts (3 ea.)		1968	N	N	N	SI 503342013 - 1 - 2 - 3
	# 13 Mill Collector Belt		1968	N	N	N	SI 501912013
	# 13 Mill Feed Conveyor		1968	N	N	N	SI 501913013
	# 13 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654013
032	# 14 Fine Ore Feeder Belts (3 ea.)		1968	N	N	N	SI 503342014 - 1 - 2 - 3
	# 14 Mill Collector Belt		1968	N	N	N	SI 501912014
	# 14 Mill Feed Conveyor		1968	N	N	N	SI 501913014
	# 14 Wet Scrubber - Sierrita Mill Building	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654014
033	# 15 Fine Ore Feeder Belts (3 ea.)		1970	N	N	N	SI 503342015 - 1 - 2 - 3
	# 15 Mill Collector Belt		1970	N	N	N	SI 501912015
	# 15 Mill Feed Conveyor		1970	N	N	N	SI 501913015
	#15 Wet Scrubber - Mill Feed Belt System	10,000 acfm		N	N	N	Ducon UW-4, III, size 60, SI 502654015

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
063	Lime Unloading & Handling System						
	Lime Unloading & Handling Processes	10 tph	1968	N	N	N	500-ton Lime Storage Bin and Slaking System
	Wet Scrubber	6400 acfm		N	N	N	Ducon UW-4, III, size 48, SI 1502674001
	Alternate Wet Scrubber	6400 acfm		N	N	N	Ducon UW-4, III, size 48
073	Copper/Moly Concentrate Storage Areas	NA	1957, 1968	N	N	N	NA
<i>Section VI: Molybdenum (Moly) Plant</i>							
041	Unleached Molybdenum Sulfide Dryers						
	Three (3) Dryers	3.75 tph	1968 - 1995	N/A	N	N	Holoflite Type 2D-1620-6 Dryers
	Wet Scrubber - Unleached Moly Sulfide Dryers	6400 acfm		N/A	N	N	Ducon UW-4X, III, size 48, SI 16062140
Leach & Unleach Moly Sulfide Storage, Screening and Handling							
042	Leach & Unleach Moly Sulfide Storage, Screening and Handling	60 tph	1969-1994	N/A	Y	N	NA
	Moly Sulfide Baghouse	6000 acfm		N/A	N	N	Mikro Pulsaire 81S-10-20, SI 16026630
	Alternate Moly Sulfide Baghouse	6000 acfm		N/A	N	N	Scientific Model SPJ-64-RTI
044	Moly Sulfide Dump Hopper (includes 3 dump hoppers)	NA	1990	N/A	Y	N	NA
044 A	Moly Sulfide Dump Hopper Baghouse on 1 Dump Hopper	NA	2007	N/A	N	N	NA
045	Moly Sulfide Screw Conveyor Loadout #1	NA	1995	N/A	Y	N	NA
117	Moly Sulfide Screw Conveyor Loadout #2	NA	2001	N/A	Y	N	NA
Moly Oxide Storage, Screening and Handling							
048	Moly Oxide Storage, Screening and Handling	12 tph	1968	N/A	Y	N	
	Moly Oxide Baghouse	4,200 acfm	1968	N/A	N	N	Mikro Pulsaire 56S-10-20, SI 16026600
Leached Moly Sulfide Dryers							
	Three (3) Sets of Dryers	22.5 tph	1968	N/A	N	Y	Holoflite Type 2D-1620-6 Dryers
053	#1 Wet Scrubber - Moly Leach Dryers	6400 acfm	1968	N/A	N	Y	Ducon UW-4X, III, size 48, SI 160613001
054	#2 Wet Scrubber - Moly Leach Dryers	6400 acfm	1968	N/A	N	Y	Ducon UW-4X, III, size 48, SI 160613002
Moly Packaging & Handling Systems							
059	Moly Packaging Processes		1968	N/A	Y	N	
	Cannery Cartridge Dust Collector	12,000 acfm	2011	N/A	N	N	FARR Cartridge Dust Collector

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
Molybdenum Roasting							
058	Two (2) #1 and #2 Molybdenum Roasters		1968	N	N	Y	Skinner Multiple Hearth Roaster
	Two (2) Cyclones	52,300 acfm	1968	N	N	N	Buell Eng. 4BAR #50 Series 43
	Two (2) Electrostatic Precipitators	52,300 acfm	1968	N	N	Y	Western Precipitation Div.
	Two (2) Lime Slurry Scrubbers	46,900 acfm	1968	N	N	N	UOP Model 500TCA, SI 60621101
	Two (2) Brinks Mist Eliminator System	45,000 acfm	1975	N	N	N	Monsanto Enviro-Chem System, Brinks
	Main Roaster Stack	NA	NA	N	N	N	
118	Molybdenum Leach Plant	12,100 lbs Cu Recovery	1970	N/A	N	N	
	Fume Scrubber	6,400 acfm	2007	N	N	N	NA
119	Rhenium Recovery Operation	NA	NA	N/A	N	N	
	DE Storage Bin	60 ft3	2006	N	Y	N	Hapman Storage Bin
	DE Screw Conveyor	500 lbs/day	2006	N	Y	N	Hapman Series 300 Helix Assembly
SECTION VII: DECANT SOLIDS HANDLING EQUIPMENT							
123	Loader		2004	N	Y	N	
SECTION VIII: MAGNETIC STEEL RECOVERY PLANT							
125	Coarse Conveyor No. 1	490 tph	1993	Y	Y	N	42"x40' Conveyor, 9-42-7405AA
	Magnet No. 1			N	N	N	Dings Magnet, 1669A
	Metal Ball Scrap Conveyor No. 1	700 tph	2001	Y	Y	N	36"x30' Conveyor 9-36-8295AA
	Fines Conveyor No. 1	700 tph	2001	Y	Y	N	36"x30' Conveyor 9-36-8296AA
	Fines Conveyor No. 2	350 tph	1999	Y	Y	N	36"x40' Conveyor 9-36-8039AA
	Magnet No. 2			N	N	N	Dings Magnet
	Metal Chips Conveyor No. 2	700 tph	1977	Y	Y	N	36"x30' Conveyor 9-36-7835AA
	Radial Stacker	700 tph	2003	Y	Y	N	36"x80' Conveyor, 9-36-8441AA

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
<i>SECTION X: NATURAL GAS HEATERS AND BOILERS</i>							
062	Boiler - Moly Leach Heating (Primary)	8.3 MMBtu/hr	1960	N	N	N	Parker Model 150
	NG Heater- Moly Dryer Oil Heating System 2	6.3 MMBtu/hr	1968	N	N	N	American Hydrotherm Model 500
	NG Heater- Moly Dryer Oil Heating System 1	6.3 MMBtu/hr	1968	N	N	N	American Hydrotherm Model 500
	Rhenium Plant Water Heater	1.2 MMBtu/hr	1997	N	N	N	Parker Model WH1210
	Change Room Boiler	2.0 MMBtu/hr		N	N	N	Parker Model
	SX Electrolyte Heater	2.6 MMBtu/hr	1979	N	N	N	Parker Model
	Moly Leach Heating (Standby)	6.3 MMBtu/hr		N	N	N	Parker Model 150
	EW Electrolyte Heater	3.31 MMBtu/hr	1955	N	N	N	Cyclotherm Model C-10500
	Moly Autoclave Boiler	2.0 MMBtu/hr	pre-1980	N	N	N	
	EW Cathode Wash Heater	0.4 MMBtu/hr	1993	N	N	N	Parker Model
	Moly Briquette Heater	3.5 MMBtu/hr	1989	N	N	N	Maxon Oven Pack
	Mine Truck Shop Wash Heater	935,000 Btu/hr	2006	N	N	N	
	Analytical Lab Boiler	0.860 MMBTU/hr	2015	N	N	N	Parker, 103-25
	Twin Buttes EW Boiler	4.4 MMBtu/hr		N	N	N	
Miscellaneous fuel-burning equipment fired at a sustained rate of less than 1 million BTU/hr	< 1 MMBtu/hr				N	N	

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
<i>SECTION XI: STATIONARY ENGINES</i>							
126	Tailing Thickener Diesel Generator	375 hp	1991	N	N	N	Diesel Generator, ID 48104
	Mill Reservoir Fire Water Pump	130 hp	Pre-2006	N	N	N	Natural Gas Emergency Fire Water Pump, ID 905553002
	Molybdenum Roaster Emergency Generator	168 hp	Pre-2006	N	N	N	Natural Gas Generator, ID 7206034810
	CEMS Emergency Generator	20 hp	2006	N	N	N	Natural Gas Generator, ID 7206034820
	Hydromet #3 Headwall Generator	1600 hp	2009	Y, 40 CFR 60 IIII	N	N	Diesel Generator, ID 72051857
	Hydromet Twin Buttes Emergency Fire Water Back-Up	280 hp	Pre-2006	N	N	N	Diesel Generator ID 72015015
	Radio Hill Generator	23 hp	Pre-2006	N	N	N	Propane Generator, ID 826088
	Dispatch Tower Generator	57 hp	Pre-2006	N	N	N	Propane Generator, ID 834016
	Mine Engineering Generator	10 hp	Pre-2006	N	N	N	Propane Generator, ID 834017
	Administration Bldg. Generator	200 hp	Pre-2006	N	N	N	Natural Gas Generator
	Mine Maintenance Truck Shop Fire Water	67 hp	Post-2008	Y, 40 CFR 60 IIII	N	N	Diesel Fire Water Pump
	Primary Crusher Basement Generator	158 hp	Pre-2006	N	N	N	Propane Generator, SN E040646390
	SCC Emergency Generator	137 hp	Pre-7/1/2008	N	N	N	Natural Gas Generator
	Twin Buttes Administration Building (Sandcastle) back-up power Generator	25 kW (39.5 hp)	2010	N	N	N	Cummins 25GGMB
	Twin Buttes Radio Hill backup Generator	25 kW (39.5 hp)	2010	N	N	N	Cummins 25GGMB
	Tailing Pump Station back-up power generator	200 kW (268 hp)	2010	N	N	N	Cummins DSHAC
	Dispatch Tower #2 backup power Generator	47 kW (63 hp)	2007	N	N	N	Cummins GGFE5790132
	Sierrita Mobile Radio Tower backup power Generator	9.3 kW (12.5 hp)	2012	Y 40 CFR 60 IIII	N	N	MultiQuip Whisper™ DS70000SS
	Sierrita Health Clinic backup power Generator	108 kW (145 hp)	2012	Y 40 CFR 60 IIII	N	N	Cummins DSFAD
	Administration Communications Room backup power Generator	150 kW (200 hp)	2014	Y 40 CFR 60 JJJ	N	N	Cummins GGLB
Sierrita Chlorinator Scrubber backup power Generator	150 kW (201 hp)	2014	Y 40 CFR 60 JJJ	N	N	Cummins GFPA	

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
<i>SECTION XII: MISCELLANEOUS AND FUGITIVE EMISSION SOURCES</i>							
076	Organic Storage Tanks - SX #1, #2, #3	NA	NA	N	N	N	NA
078	Gasoline Storage Tanks	12,000 gal/each	1990	N	N	N	Tanks ML-11(1), ML-11(2), SP-13
087	Sierrita Tailing Impoundment	NA	NA	N	N	N	NA
093	6' x 20' Triple Deck Screen	500 tph	209		N	N	KPI-JCI, 6203-32LP S071980
093	Vibrating Grizzly Feeder	500 tph	2010	Y	N	N	KPI-JCL
093	6' x 20' Triple-Deck Screen	500 tph	2010	Y	N	N	Reuter
093	36''x60' Stackable Triple Deck Screen	500 tph	2010	Y	N	N	Reuter
093	36'' x 60' Stackable Conveyor	500 tph	2010	Y	N	N	Reuter
093	36'' x 60' Stackable Conveyor	500 tph	2010	Y	N	N	Reuter
093	Portable Radial Stacking Conveyor 36'' x 100'	500 tph	2010	Y	N	N	KPI-JCI 13-36100
093	Portable Cone Crusher	500 tph	2010	Y	N	N	KPI-JCI, 1400LS. C080519
105	Twin Buttes Electrowinning Tankhouse	144 cells	1975	N	N	N	NA
120	Miscellaneous Screens and Grizzlies	NA	NA	N	N	N	NA
124	Portable Screen Plant	1300 tph	1978	N	Y	N	Kolberg, 1142-50, 1393-1142PDT-78
127	Sequential Metals Extraction (SME) Tanks	NA	2013	N	N	N	Pilot Plant
	SME Dry Media Scrubber #1	100 acfm	2013	N	N	N	Purafil DS100, SM-600-SC-001
	SME Dry Media Scrubber #2	100 acfm	2013	N	N	N	Purafil DS100, SM-600-SC-002
	SME Dry Media Scrubber #3	100 acfm	2013	N	N	N	Purafil DS100, SM-600-SC-003
	SME Dry Media Scrubber #4	100 acfm	2013	N	N	N	Purafil DS100, SM-600-SC-004
	Dry Scrubber	387 cfm	2014	N	N	N	Purafil, DS300
	Dry Reagent Mix Tank	NA	2013	N	N	N	
128	Ion Exchange Lime Unloading and Handling		2008	N	Y	N	
	Dry Reagent Mix Tank		2008	N	Y	N	

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
129	Ventilation Scrubber	232 acfm	2012	N	N	N	
	Lime Hopper	60 ft ³	2006		Y	N	Hapman Storage Bin
	Lime Screw Conveyor	500 lb/day	2006	N	Y	N	Hapman, Series 300 Helix Assembly
SECTION II: PRIMARY CRUSHING							
113	Primary Crusher Wet Scrubber	40,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 2303221
SECTION IV: FINE ORE CRUSHING – SECONDARY AND TERTIARY CRUSHING (REQUIREMENTS IN SECTION III)							
075	#10 Wet Scrubber- Sierrita Secondary Scalping Screens	25,000 acfm		Y	N	Y	Ducon UW-4, III, size 102, SI 402652010
SECTION IV: FINE ORE CRUSHING – SECONDARY AND TERTIARY CRUSHING (REQUIREMENTS IN SECTION III)							
002 - 007	#1 Wet Scrubber - Sierrita Secondary Crushing Building	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652001
	#2 Wet Scrubber – Sierrita Secondary Crushing Building	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652001
	#3 Wet Scrubber – Sierrita Secondary Crushing Building	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652001
	#4 Wet Scrubber – Sierrita Secondary Crushing Building	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652001
	#5 Wet Scrubber – Sierrita Secondary Crushing Building	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652001
	#7 Wet Scrubber – Sierrita Secondary Crushing Building	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652001
	#6 Wet Scrubber (to be replaced by 25,500 acfm wet scrubber)	12,000 acfm/ 25,500 acfm		N	N	Y	Ducon UW-4, III, size 66, SI 402652006 to be replaced with Ducon UW-4, size 144, SI 402652008
112	#9 Wet Scrubber	57,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 4026490
121	#12 Wet Scrubber	58,000 acfm		Y	N	Y	Ducon UW-4, III, size 144, SI 402652012
SECTION V: FINE ORE STORAGE AND HANDLING (REQUIREMENTS IN PERMIT SECTION IV)							
116	Wet Scrubber - 8B to 8C Conveyor Transfer	8000 acfm		N	N	Y	Ducon UW-4, IV size 54, SI 402652010
009	#1 Baghouse - Sierrita Fine Ore Bin	4500 acfm		N	N	Y	Mikro Pulsaire 64-8-20, SI 26530-1
010	#2 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-6
011	#3 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-8
012	#4 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-4
013	#5 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-3
014	#6 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-2
015	#7 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-5
016	#8 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-7
017	#9 Baghouse - Sierrita Fine Ore Bin	3000 acfm		N	N	Y	Mikro Pulsaire 36S-8-30, SI 26530-9

ID	EQUIPMENT NAME	CAPACITY	YEAR	NSPS	MATERIAL HANDLING FACILITY	CAM	MAKE, MODEL, SIERRITA ID#
SECTION IX: COPPER SULFATE PLANT							
122	One (1) Crystallizer Feed Tank	NA	2004	N	N	N	
	Five (5) Cooling Tanks	NA	2004	N	N	N	
	One (1) Magnesium Carbonate Bin and Feeder Belt (2 Transfer Points)	NA	2004	N	Y	N	
	Three (3) Wet Crystal Cyclones	NA	2004	N	N	N	
	Two (2) Wet Crystal Centrifuges	NA	2004	N	Y	N	
	One (1) Dryer Feed Belt (3 Transfer Points)	NA	2004	N	N	N	
	One (1) Dryer Feed Hopper	NA	2004	N	Y	N	
	One (1) Fluid Bed Dryer	NA	2004	N	N	Y	
	One (1) Vibrating Product Double Deck Screen	NA	2004	N	N	N	
	Product and Magnesium Carbonate / Bagging Bin Screw Conveyor (3 Transfer Points)	NA	2004	N	Y	N	
	One (1) Flow Aid Bin	NA	2004	N	Y	N	
	One (1) Product Bagging Bin	NA	2004	N	Y	N	
	One (1) Product Bagging Feeder Conveyor (2 Transfer Points)	NA	2004	N	Y	N	
One (1) Bag Filling Machine	NA	2004	N	Y	N		
One (1) Product Recovery Cyclone	NA	2004	N	N	N		
122 A	Copper Sulfate Product Recovery Collector	25,200 acfm	2004	N	N	Y	DownFlow II Dust Collector, DFT 4-32
122 B	Copper Sulfate Baghouse	6,800 acfm	2012	N	N	Y	Scientific SPJ-96-X4RT8
SECTION XI: STATIONARY ENGINES							
126	West Robo Shack Generator	10 hp	Pre-2006	N	N	N	Propane Generator, ID 826089
	Truck Shop Generator	10 hp	Pre-2007	N	N	N	Propane Generator, ID 826090
	Love Shack Generator	10 hp	Pre-2006	N	N	N	Propane Generator, ID 834015
	Menudo Bowl Generator	25 kW (49 hp)	2012	Y 40 CFR 60 IIII	Y	N	Cummins DSKCA
SECTION XII: MISCELLANEOUS AND FUGITIVE EMISSION SOURCES							
093	Road Rock Crushing & Screening Plant	400 tph	1966	N	N	N	Cedarapids/El Jay RC454 STD Cone Crusher

ATTACHMENT D

CEMS EXCESS EMISSIONS AND MONITORING SYSTEM PERFORMANCE REPORT
FORM

Proposed Permit

**SUMMARY REPORT OF EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE
FOR FREEPORT-MCMORAN SIERRITA, INC.**

Pollutant: SO₂

Reporting Period Dates: From _____ to _____

Company: Freeport-McMoRan Sierrita, Inc.

Emission Limitation: No discharge into the atmosphere from any roaster (the operating temperature of which exceeds 700 degrees F.) reduced sulfur in excess of ten percent of the sulfur entering the process as feed

Address: 6200 West Duval Mine Road, Green Valley, AZ 85622

Monitor Manufacturer and Model No.:

Date of Latest CEMS Certification or Audit:

Process Unit Description:

Total Source Operating Time in Reporting Period (in hours):

Emission Data Summary

1. Duration of excess emissions in reporting period due to:
 - a. Startup/shutdown: _____
 - b. Control equipment problems: _____
 - c. Process problems: _____
 - d. Other known causes: _____
 - e. Unknown causes: _____
2. Total duration of excess emissions: _____
3. Total duration of excess emissions x (100)[total source operating time]: _____ %

SO₂ Generation Determination Performance Summary

1. SO₂ Generation Determination downtime in reporting period due to:
 - a. Failure to collect/retain valid two-hour feed sample: _____
 - b. Failure to collect/retain valid 24-hour composite sample: _____
 - c. Failure to determine 24-hour percent sulfur in feed: _____
 - d. Failure to determine 24-hour moisture content in feed: _____
 - e. Failure to collect/retain valid one-hour feed weigh bin data: _____
 - f. Failure to correct one-hour wet feed value to dry feed value: _____
 - g. Failure to determine one-hour SO₂ generated: _____
2. Total Generation Determination downtime (periods in which more than one of the above circumstances apply are to be counted only once): _____
3. Total Generation Determination downtime x (100)[total source operating time]: _____ %

CEMS Performance Summary

1. CEMS downtime in reporting period due to:
 - a. Monitor equipment malfunctions: _____
 - b. Non-monitor equipment malfunctions: _____
 - c. Quality assurance calibrations: _____
 - d. Other known causes: _____
 - e. Unknown causes: _____
2. Total CEMS downtime: _____
3. Total CEMS downtime x (100)[total source operating time]: _____ %

On a separate page, describe any changes since last report in CEMS, process, or controls.

I certify that the information contained in this report is true, accurate, and complete.

Name: _____

Signature: _____

Title: _____

Date: _____