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

SASOL CHEMICALS (USA), LLC.
7800 S. KOLB ROAD
TUCSON, AZ 85706

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

THIS PERMIT ISSUED SUBJECT TO THE **Specific Conditions and Attachment 1**

PERMIT NUMBER **1683** PERMIT CLASS **II**

ISSUED: **February 12, 2016** EXPIRES: **February 11, 2021**

Rupesh Patel — ***Rupesh Patel, Air Permit Manager, PDEQ***

SIGNATURE TITLE

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SOURCE SUMMARY

This operating permit is a renewal of a 5-year permit. It is the second five-year permit issued to Sasol Chemicals (USA), LLC, (Sasol) the Permittee. This facility is a **Class II; True Minor Stationary Source** for all pollutants. This condition is only true when the facility is operating and maintaining the air pollution control equipment as part of its operational design.

Sasol is a facility that produces high purity alumina products for the use in synthetic crystal growth, ceramics for semi-conductor processing, bio-ceramics, ceramics for translucent lighting components, fluorescent lamp coatings, phosphors, luminescent materials and other specialty applications. Sasol uses milling techniques and thermal treatment (calcination) to achieve desired product properties.

The following emission rates are for reference purposes only and are not intended to be enforced by direct measurement unless otherwise noted in the Specific Conditions of this permit.

Pollutant	Potential To Emit (Tons per Year)
Nitrogen Oxides (NO_X)	15.37
Carbon Monoxide (CO)	15.38
Volatile Organic Compounds (VOC)	0.90
Particulate Matter (PM)	15.6
Sulfur Oxides (SO_X)	2.57
Hazardous Air Pollutants (HAPs – combined)	0.57

Explanation of Permit Structure

The specific conditions of this permit are divided into the following five sections.

Section I: Pima County Code (Facility Wide Standards)

Section II: New Source Performance Standards (NSPS) for Calciners and Dryers in Mineral Industries

Section III: Standards of Performance for Unclassified Sources

Section IV: Standards of Performance for Fossil Fuel Fired Industrial and Commercial Equipment

Section V: NSPS Standards for Spark Ignition Internal Combustion Engines

Section I contains Pima County Code regulations that apply to all sources of air contaminants operating in Pima County and are Locally Enforceable Conditions unless noted otherwise. Sections II through V group the affected sources into emission limitation categories.

SECTION I

FACILITY WIDE - SPECIFIC CONDITIONS

[References are to Title 17 of the Pima County Code unless otherwise noted]

I. Pima County Code

(The following provisions contained in this section apply to all sources of air contaminants operating in Pima County and are Locally Enforceable Conditions unless noted otherwise.)

A. Emission Limitations and Standards [PCC 17.12.185.A.2]

1. General Control Standards

   a. The Permittee shall not cause or permit the planning, construction, installation, erection, modification, use or operation of an emission source which will cause or contribute to a violation of a performance standard in Title 17 of the Pima County Code.
   [PCC 17.12.020 & PCC 17.16.020.A]

   b. 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 are 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 owner or operator thereof to a degree that will adequately reduce or eliminate the discharge of air pollution to adjoining property. [PCC 17.16.020.B]

2. Materials Handling Standards

   a. The Permittee shall not transport or store VOC's without taking necessary and feasible measures to control evaporation, leakage, or other discharge into the atmosphere.
   [PCC 17.16.400.A]

   b. Materials including solvents or other volatile compounds, paints, acids, alkalies, pesticides, fertilizers and manure 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]

3. Odor Limiting Standard

   The Permittee shall not emit gaseous or odorous materials from equipment, operations or premises under his control in such quantities or concentrations as to cause air pollution.
   [PCC 17.16.030]

4. Opacity Limit

   Except as otherwise specified in the Specific Conditions of this permit, the opacity of all plumes and effluents from all point, non-point, or fugitive emission sources shall not exceed 20% as determined by EPA Reference Method 9, Appendix A, 40 CFR Part 60.
   [PCC 17.16.050.B, PCC 17.16.040 & PCC 17.16.130.B.1]
   [This condition is Federally Enforceable when opacity is above 40%]

5. Visibility Limiting Standard [PCC 17.16.050]

a. The Permittee shall not cause, suffer, allow or permit operations or activities likely to result in excessive amounts of airborne dust without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne.

b. 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, without taking reasonably necessary and feasible precautions to control generation of airborne particulate matter. 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.

i. Condition A.5.b of this Section 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.

ii. Condition A.5.b of this Section shall not apply to the generation of airborne particulate matter from undisturbed land.

B. Monitoring Requirements [PCC 17.12.185.A.3]

1. Visible Emissions (VE)

If at any time or while conducting an opacity check required by the Specific Conditions of this permit the Permittee sees any plume or effluent from a facility source, that, on an instantaneous basis, appears to exceed 20% opacity (Except as otherwise specified in the Specific Conditions of this permit) or diffuse beyond the property boundary line, the Permittee shall investigate the source of the emissions and, if required, take corrective action. If the plume persists or the activity or operation which is causing or contributing to the emissions cannot be corrected or halted, the Permittee shall, when practicable, make a visual determination of the opacity in accordance with EPA reference Method 9 using a certified visible emissions evaluator. If the VE determination exceeds the applicable opacity limit, or the emissions diffuse beyond the property boundary line, the Permittee shall report this as an excess emission in accordance with IV.A of this Section.
[PCC 17.16.040]

2. Additional Monitoring Requirement

Monitoring facility-wide operations for compliance with the standards in A.1 through 5 of this Section shall not be necessary as the use of good modern practices prevents emissions in excess of the standards. The Control Officer may ask the Permittee to monitor and control emissions if the Control Officer has reasonable cause to believe a violation of the standards has been committed.

C. Recordkeeping Requirements [PCC 17.12.185.A.4]

1. Monitoring Records

The Permittee shall maintain records of required monitoring information. Records shall include at a minimum: [PCC 17.12.184.A.4.a]

a. The date, time, and the place defined in the permit requiring the measurement, sampling, inspection, or observation;

b. The name of the person conducting the measurement, sampling, inspection or observation;

c. The particular piece of equipment, process, or area being measured, sampled, inspected or observed including a description of the operating conditions and monitoring techniques or methods used as applicable; and,

d. The results of the measurement, sampling, inspection or observation including any discrepancy or excess emissions. If there are any monitoring discrepancies or excess emissions, the record shall include the corrective action taken.

2. Record Retention

The Permittee shall retain records of all required monitoring and support information for at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes copies of all reports required by the permit. [PCC 17.12.185.4.b]

3. Recordkeeping for Compliance Determinations

The Permittee shall retain a copy of the permit onsite including all required monitoring records and support information. In addition, all equipment identified in the permit equipment list shall be marked with a unique, clearly visible, and accessible ID to identify the piece of equipment. The Permittee shall be considered in compliance by demonstrating that sufficient information on the equipment and facility operations is periodically collected, recorded, and maintained to assure that the compliance status of any specific condition of this permit can be readily ascertained at any time. [PCC 17.12.080, & PCC 17.24.020.A]

D. Reporting Requirements [PCC 17.12.185.A.5]

1. Excess Emissions Reporting

The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit in accordance with G.1.b of the Additional Permit Conditions of this Section. [PCC 17.12.040]

2. Emissions Inventory Reporting: [PCC 17.12.320]

The Permittee shall complete and submit to the control officer, when requested, an annual emissions inventory questionnaire pursuant to PCC 17.12.320.

3. Certification of Truth Accuracy and Completeness

All reports required by this permit shall contain certification by a responsible official of truth, accuracy and completeness stating that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete. [PCC 17.12.165.I]

E. Facility Changes

1. Permit Revision Application

   Before installing additional units, modifying existing emission equipment, or switching fuels, the Permittee shall apply for the appropriate revision in accordance with PCC 17.12.235, PCC 17.12.255.B or PCC 17.12.260. [PCC 17.12.235, PCC 17.12.255, PCC 17.12.260]

2. Notification

   For facility changes that do not require revision, the Permittee may make the changes if written notice is provided to the Control Officer in advance of the changes in accordance with PCC 17.12.240.C. [PCC 17.12.240.C]

3. Recordkeeping Log

   The Permittee shall maintain a log of other facility changes that do not require revision or notice pursuant to PCC 17.12.240.B. [PCC17.12.240.B]

F. Testing Requirements [PCC 17.12.045, PCC 17.12.050 & PCC 17.20.010]

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit 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 federal requirements if the appropriate performance or compliance procedures or methods had been performed. Methods referenced below are from 40 CFR Part 60, Appendix A unless otherwise noted.

1. When required, EPA Test Method 9 shall be used to monitor compliance with the opacity standards identified in this Permit.

2. Should the Permittee desire to test or be required to test to demonstrate compliance with the standards contained in this permit, the Permittee shall contact the control officer for test methods and guidelines.

G. Additional Permit Requirements

1. Compliance with Permit Conditions [PCC 17.12.185.A.7.a & b]

   a. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and the air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and 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. 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:
[PCC 17.12.185.A.5 & PCC 17.12.040]

i. Notification by telephone or facsimile within 24 hours of the time the Permittee first learned of the occurrence of excess emission that includes all available information pursuant to PCC 17.12.040.B. To report excess emissions call **520-724-7400** or fax to **520-838-7432.**

ii. Detailed written notification by submission of an excess emissions report within 72 hours of the notification in G.1.b.i above. **Send to PDEQ 33 N. Stone Ave, Suite 700, Tucson, Arizona 85701.**

c. 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.

d. The permit does not convey any property rights of any sort, or any exclusive privilege to the permit holder.

e. The Permittee shall pay fees to the Control Officer pursuant to PCC 17.12.510.
[PCC 17.12.185.A.9 & PCC 17.12.510]

2. Permit Revision, Reopening, Revocation and Reissuance, or Termination for cause
[PCC 17.12.185.A.7.c]

The permit may be revised, reopened, revoked and reissued, or terminated for cause pursuant to PCC 17.12.270. 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.

3. Duty to Provide Information [PCC 17.12.165.G & PCC 17.12.185.A.7.e]

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 shall furnish a copy of such records to the Control Officer along with a claim of confidentiality.

b. If the Permittee has failed 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.

4. Severability Clause [PCC 17.12.185.A.6]

The provisions of this permit are severable. If any provision of this permit is held invalid, the remainder of this permit shall not be affected thereby.

SECTION II

NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR CALCINERS AND DRYERS IN MINERAL INDUSTRIES

II. Facilities subject to the NSPS for Calciners and Dryers in Mineral Industries (40 CFR Part 60, Subpart UUU.)

A. Applicability

The conditions of this section are applicable to the NSPS affected facilities identified in Attachment 1, Table 1 and their associated pollution control equipment identified in Attachment 1, Table 5 of this permit.

B. Emission Limits and Standards

1. The Permittee shall not discharge any emissions into the atmosphere from any affected facility that:

   a. Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057g/dscm (0.025 gr/dscf) for dryers.

   [40 CFR 60.732 (a)]

   [Federally Enforceable Condition]

   b. Exhibits greater than 10 percent opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device. [40 CFR 60.732 (b)]

   [Federally Enforceable and Material Permit Condition]

2. NSPS Determination Detail

   a. The Permittee shall not emit more than 11 tons of particulate emissions per year from the Large Spray Dryer, the Harrop Shuttle Kiln #1 and the Harrop Shuttle Kiln #2, equipment numbers SD-702, FU-500, and FU-501, respectively, by installing, operating and maintaining pollution control equipment identified in Attachment 1 Table 5 of this permit.

   [PCC.17.12.190.B]

   [Federally Enforceable Condition and Voluntary Accepted Limitation]

   b. Reprocessing facilities that process alumina and emit less than 11 tons/yr are exempt from monitoring requirements of Subpart UUU.

   [EPA DETERMINATION DETAIL CONTROL NUMBER 9600060] [PCC.17.12.190.B]

   [Federally Enforceable Condition and Voluntary Accepted Limitation]

   c. The opacity standards set forth in II.B.1.b of the Specific Conditions shall apply at all times except during periods of startup, shutdown, and malfunction. [40 CFR 60.11(c)]

   [Federally Enforceable and Material Permit Condition]

d. 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 pollution control equipment, identified in Attachment 1, Tables 1 and 5 in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator or the Control Officer which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]

[Federally Enforceable and Material Permit Condition]

C. Monitoring Requirements [PCC 17.12.180.A.3]

1. Large Spray Dryer and Harrop Shuttle Kilns Emissions

   a. To determine compliance with the applicable emissions limitation and standards in II.B of the Specific Conditions, the Permittee shall monitor the following: [PCC 17.12.030]

      i. The process operating parameters and limits,

      ii. The maintenance procedures and schedules, and

      iii. The documentation methods necessary to demonstrate proper operation and maintenance of the air pollution control system.

   b. To determine compliance with opacity limitation in II.B.1.b (10%), the Permittee shall observe the emission points of the Large Spray Dryer and Harrop Shuttle Kilns at least once each day when the affected facilities are operating. If the observer sees a plume that, on an instantaneous basis, appears to exceed 10%, then the Permittee shall, if practicable, take a six-minute Method 9 observation of the plume. If the emissions are greater than 10% opacity, this shall be recorded and reported as an excess emission and a permit deviation.

2. Pendulum Kiln Emissions

   a. To determine compliance with the applicable emissions limitation and standards in II.B of the Specific Conditions, the Permittee shall monitor the following: [PCC 17.12.030]

      i. The process operating parameters and limits,

      ii. The maintenance procedures and schedules, and

      iii. The documentation methods necessary to demonstrate proper operation and maintenance of the air pollution control system.

   b. Controlled emission point at the stack of the pendulum kiln baghouse:

      To determine compliance with opacity limitation in II.B.1.b (10%), the Permittee shall observe the emission point of the stack at least once each day when the affected facility is operating. If the observer sees a plume that, on an instantaneous basis, appears to exceed 10%, then the Permittee shall, if practicable, take a six-minute Method 9 observation of the plume. If the emissions are greater than 10% opacity, this shall be recorded and reported as an excess emission and a permit deviation.

c. Uncontrolled emission point at the exit end of the pendulum kiln:

To determine compliance with opacity limitation in II.B.1.b (10%), the Permittee shall observe the uncontrolled emission point where product exits the pendulum kiln at least once each day when the affected facility is operating. If the observer sees a plume that, on an instantaneous basis, appears to exceed 10%, then the Permittee shall, if practicable, take a six-minute Method 9 observation of the plume. If the emissions are greater than 10% opacity, this shall be recorded and reported as an excess emission and a permit deviation.

D. Recordkeeping Requirements [PCC 17.12.180.A.4]

1. The Permittee shall record the results of all observations of the Pendulum Kiln, Large Spray Dryer, Shuttle Kilns and their associated pollution control equipment in accordance with the operation and maintenance plan.

2. The Permittee shall record all monitoring results including EPA reference Method 9 observations, excess emissions and permit deviations. If no visible emissions are observed, the record shall reflect this. Records of such checks shall include the information required in I.C.1 of the Specific Conditions.

E. Reporting Requirements [PCC 17.12.180.A.5]

1. Operation and Maintenance

When required, the Permittee shall report the results of all observations of the Pendulum Kiln and Large Spray Dryer Baghouses in accordance with the operation and maintenance plan.

2. Excess emissions shall be reported according to section I.D of the Specific Conditions.

F. Testing Requirements [40 CFR 60.736]

1. In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b). [40 CFR 60.736 (a)]

2. The owner or operator shall determine compliance with the particulate matter standards in II.B.1 of the Specific Conditions as follows: [40 CFR 60.736 (b) & 40 CFR 60.732]

a. Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm. [40 CFR 60.736 (b)(1)]

b. Method 9 and the procedures in §60.11 shall be used to determine opacity from stack emissions. [40 CFR 60.736 (b)(2)]

SECTION III

STANDARDS OF PERFORMANCE FOR UNCLASSIFIED SOURCES

A. Applicability

The conditions of this section are applicable to the equipment identified in Attachment 1, Table 2 and their associated APC listed in Attachment 1, Table 5 of this permit.

B. Emission Limits & Standards [PCC 17.16.430.A]

For particulate matter discharged into the atmosphere in any one hour from any unclassified process source in total quantities in excess of the amounts calculated by one of the following equations:

1. For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

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

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.
P = the process weight in tons-mass per hour.

2. For process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

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

where:

E and P are defined as indicated in paragraph ‘a’ of this subdivision.

C. Monitoring

Opacity Limitation

The Permittee shall observe the emission points of the equipment listed in Attachment 1, Table 2 at least once each day when the affected facilities are operating. If the observer sees a plume that, on an instantaneous basis, appears to exceed 20%, then the Permittee shall, if practicable, take a six-minute Method 9 observation of the plume. If the emissions are 20% or more, this shall be recorded and reported as an excess emission and a permit deviation.

D. Recordkeeping Requirements

The Permittee shall record all observations made under Monitoring described in III.C of the Specific Conditions. If no visible emissions are observed, the record shall reflect this. Records shall include the information specified in I.C of the Specific Conditions

E. Reporting Requirements

Follow the reporting requirements according to Pima County Code for the facility wide operations in I.D of the Specific Conditions.

SECTION IV

STANDARDS OF PERFORMANCE FOR FOSSIL FUEL FIRED INDUSTRIAL AND COMMERCIAL EQUIPMENT

A. Applicability

The conditions of this section are applicable to the Fossil Fuel Fired Equipment identified in Attachment 1, Table 3 of this permit.

B. Emission Limits and Standards

1. Opacity Limitation

   The Permittee shall not cause, allow or permit the effluent from the boiler to have an average optical density equal to or greater than 20 percent. [PCC 17.16.040]

2. Fuel Limitation

   a. The Permittee shall burn only the specified fuel allowed for the boiler in Attachment 1, Table 3 of this Permit. [PCC 17.12.190.B]

   [Material Permit Condition]

   b. The Permittee shall not use high sulfur oil (fuel sulfur content >0.90% by weight) as a fuel unless the Permittee demonstrates to the satisfaction of the Control Officer that sufficient quantities of low sulfur oil are not available for use by the source and that it has adequate facilities and contingency plans to insure that the sulfur dioxide ambient air quality standards set forth in PCC 17.08.020 will not be violated. [PCC 17.16.165.G]

C. Monitoring Requirements

1. A demonstration to show compliance with the emission limitation for opacity in IV.B.1 of this permit shall not be required since the percent of opacity of visible emissions whilst combusting natural gas is inherently low. The Permittee shall operate and maintain the boiler at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines.

2. The Permittee shall be considered in compliance with the fuel limitation in IV.B.2 of this permit by demonstrating that boiler was fired only by the specified fuel allowed as listed in Attachment 1, Table 3 of this permit. Such a demonstration may be made by making available to the Control Officer for his inspection, documentation, such as invoices or statements from the fuel supplier, showing that only the specified fuel was purchased for use in the equipment. Alternatively, the demonstration may be made by actual inspection of the equipment showing that the specified fuel is the only fuel supply plumbed to the equipment for firing.

D. Recordkeeping Requirements

None Required

E. Reporting Requirements

None Required

SECTION V

NSPS STANDARDS FOR SPARK IGNITION (SI) INTERNAL COMBUSTION ENGINES (ICE)

40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. **[Federally Enforceable Conditions]**

A. Applicability

The conditions of this section are applicable to the NSPS Generator identified in Attachment 1, Table 4 of this permit.

B. Emission Limitations and Standards

1. NO_X, CO and VOC

The Permittee must comply with the emission standards in Table 1 of Subpart JJJJ (shown below) for their stationary emergency SI ICE. [40 CFR 60.4233(e)]

Emission Standards for Emergency SI ICE (Ref. Table 1 to 40 CFR Part 60, Subpart JJJJ)

Engine Type	Fuel Source	Maximum Engine Power	Manufacture Date	Emission Standards [a] g/HP-hr or[ppmvd at 15% O_2]		
				NO_X	CO	VOC [b]
Non-Emergency	Natural Gas	HP ≥ 500	7/1/2010	1.0 [82]	2.0 [270]	0.7 [60]

[a] Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O_2.

[b] For purposes of 40 CFR 60, Subpart JJJJ, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

2. Opacity **[Locally Enforceable Conditions]**

a. The Permittee shall not cause, allow, or permit the effluent from any stationary SI ICE to have an average opacity density equal to or greater than 20 percent. [PCC 17.16.040.A]
[This condition is Federally Enforceable when opacity is above 40%]

b. The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any stationary rotating machinery, smoke for any period greater than ten consecutive seconds that exceeds 40 percent opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. [PCC 17.12.185.A & PCC 17.16.340.E]

3. Operational Condition

a. The Permittee must operate and maintain stationary SI ICE that achieve emission standards as required in V.B.1 of this Section over the entire life of the engine. [40 CFR 60.4234]

b. It is expected that air-to-fuel ratio (AFR) controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. [40 CFR 60.4243(g)]

4. Fuel Requirements

   a. During non-emergency operations, the Permittee shall burn only the specified fuel allowed for the stationary SI ICE in Table 4, Attachment 1 of this permit. [PCC 17.12.185.A.2]
   [Locally Enforceable and Material Permit Condition]

   b. The Permittee of a stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but 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 owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of V.B.1 of the specific conditions. [40 CFR 60.4243(e) & 60.4233]

5. Installation Restrictions [40 CFR 60.4236]

   a. The Permittee may not install stationary SI ICE with a maximum engine power > 500HP, after July 1, 2009, that do not meet the applicable requirements in 40 CFR 60.4233.
   [40 CFR 60.4236(b)]

   b. The requirements of V.B.5.a of this Section do not apply to stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location. [40 CFR 60.4236(e)]

6. Compliance Requirements

   a. The Permittee must demonstrate compliance with the emission standards specified in V.B.1 of this Section for their certified stationary SI ICE and control devices according to one of the methods in V.B.6.a.i and V.B.6.a.ii of this Section: [40 CFR 60.4243(b)]

      i. By operating and maintaining the certified stationary SI ICE and control devices according to the manufacturer's emission-related written instructions and adjusting engine settings according to and consistent with the manufacturer's instructions, or
      [40 CFR 60.4243(a)(1)]

      ii. If the Permittee does not operate and maintain the certified stationary SI ICE and control devices according to the manufacturer's emission-related written instructions than the engine will be considered a non-certified engine and the Permittee must:
      [40 CFR 60.4243(a)(2)]

         (A) Keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, and
         [40 CFR 60.4243(a)(2)(iii) & (b)(2)(ii)]

         (B) Conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. [40 CFR 60.4243(a)(2)(iii) & (b)(2)(ii)]

C. Monitoring Requirements

1. Opacity

   A demonstration to show compliance with the emission limitation for opacity in V.B.2 of this Section shall not be required since the percent of opacity of visible emissions from the stationary SI ICE while combusting natural gas fuel is inherently low. The Permittee shall operate and maintain the stationary SI ICE at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines. [PCC 17.12.185.A.3]

2. Fuel Limitation

   The Permittee shall be considered in compliance with the fuel limitation in V.B.4 of this Section by demonstrating that only commercially available pipeline quality natural gas was fired in the stationary SI ICE listed. Such a demonstration may be made by making available to the Control Officer for his inspection, documentation, such as invoices or statements from the fuel supplier, showing that only commercial natural gas was purchased for use in the equipment.
   [PCC 17.12.185.A.3]

D. Recordkeeping Requirements

1. The Permittee must keep records of the information in paragraphs a through d for all stationary SI ICE. [40 CFR 60.4245(a)]

   a. All notifications submitted to comply with Section V of this permit and all documentation supporting any notifications. [40 CFR 60.4245(a)(1)]

   b. Records of conducted maintenance on the engine to demonstrate compliance.
   [40 CFR 60.4245(a)(2)]

   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. [40 CFR 60.4245(a)(3)]

   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 V.B.6.a.ii of this Section, documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4) & 40 CFR 60.4243(a)(2)]

2. The Permittee shall maintain a copy of the manufacturer's operation and maintenance manual at the facility for certified engines operated according to the manufacturer's operation and maintenance manual.

3. The Permittee shall maintain a copy of the maintenance plan required in V.6.a.ii(A) of this section at the facility for non-certified engines.

E. Reporting Requirements

1. The Permittee shall report to the Control Officer any emissions in excess of the limits established by this Section in accordance with I.D of the Specific Conditions.
   [PCC 17.12.040 & PCC 17.12.185.A.5]
   [Locally Enforceable Condition]

2. For all SI ICE that are subject to performance testing, the Permittee must submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed.
   [40 CFR 60.4245(d)]

APPLICABLE REGULATIONS

Code of Federal regulations (CFR):

40 CFR 60 Subpart UUU: Standards of Performance for Calciners and Dryers in Mineral Industries

40 CFR 60 Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

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

17.16.020	Noncompliance with applicable standards
17.16.030	Odor Limiting Standards
17.16.040	Standards and applicability - Includes NESHAPS
17.16.050	Visibility Limiting Standard
17.16.100	Particulate materials
17.16.130	Applicability
17.16.165	Standards of performance for fossil fuel fired industrial and commercial equipment
17.16.400	Organic solvents and other organic materials
17.16.430	Standards of performance for unclassified sources

ATTACHMENT 1: EQUIPMENT LIST

(TABLES 1 THROUGH 5)

Table 1: NSPS Equipment Subject to Subpart UUU

Equipment Number	Item	Make	Model	Serial Number	Manufacturer Date	Capacity
FU-201	Pendulum Kiln	Reidhammer	DP8/10G	61000500	2007	2.05 MM Btu/Hr
SD-702	Large Spray Dryer	Niro	FU11	914	Unknown	0.67 MM Btu/Hr
FU-500	Harrop Shuttle Kiln #1	Harrop	GF-SG-48/44/96-7000-2900	4163	1996	7.0 MM Btu/Hr
FU-501	Harrop Shuttle Kiln #2	Harrop	GF-SG-48/44/96-7000-2900	4395	2005	7.0 MM Btu/Hr

Table 2: Unclassified Equipment

Equipment Number	Item	Make	Model	Serial Number	Manufacturer Date	Capacity
FU-600	Tunnel Kiln #1	Reidhammer	TR16/2x34/20ox/G	00/10026	2001	1.19 MM Btu/Hr
FU-610	Tunnel Kiln #2	Noritake	BRK-1620-G	05024-1	2005	2.16 MM Btu/Hr
FU-620	Tunnel Kiln #3	Noritake	BRK-1620-G	05024-2	2006	2.16 MM Btu/Hr
EF-633	Tunnel Kiln #4	Harrop	GF-TN-42-6500-3090	4528	2014	6.5 MM Btu/Hr
SD-701	Small Spray Dryer	Niro	F15	600	1983	0.18 MM Btu/Hr
BN-800	Nol –Tec Blending Silo	Nol-Tec	Type 321, 84RD24	Unknown	1996	1,360 SCFM
JM-214	24” Jet Mill	Sturtevant	24” Micronizer	1221	1995	800 DSCFM
JM-670	Jet Mill	Netzsch	s-JET 500	8667	2013	776 DSCFM

Table 3: Fossil Fuel Fired Commercial and Industrial Equipment

Equipment Number	Item	Make	Model	Serial Number	Manufacturer Date	Capacity MM Btu/Hr	Allowable Fuel
BO-660	Steam Jet Mill Steam Generation Unit	Vapor Power International	HS2-E4626-SHR	23962	2013	4.30	Natural Gas
SH-660	Steam Jet Mill Steam Superheater Unit	Vapor Power International	H9-4322-SHR	23963	2013	1.50	Natural Gas

Table 4: NSPS Generator

Equipment Number	Item	Make	Model	Serial Number	Manufacturer Date	Capacity MM Btu/hr	Allowable Fuel	NSPS* (Subpart JJJJ) Applicability	EPA Certified Engine
EN-630	Non-Emergency Generator	Kohler Power Systems	300REZXB	SGM32BJR2	8/25/2014	3.458 (300 kW)	Natural Gas	Yes	Yes

* NSPS (Subpart JJJJ): Emergency Stationary Spark Ignition Internal Combustion Engines (SI ICE) for all natural gas fired generator.

Table 5: Air Pollution Control (APC) Equipment

Equipment Number	Item	Make	Model	Serial Number	Manufacturer Date	Capacity
APC Equipment for NSPS Facilities						
BH-201	Pendulum Kiln Baghouse	Mikropul	144S-TR10	79202H1	1992	5000 SCFM
BH-702	Large Spray Dryer Baghouse	Mikropul	25S8 30C	890014 H1	Unknown	641 SCFM
APC Equipment for Non-NSPS Facilities						
BH-701	Small Spray Dryer Baghouse	Mikropul	16S4 30	76620H1	Unknown	196 SCFM
BP-214	24” Jet Mill Baghouse	C.P. Environ.	84FR030S	3822	1996	1000 SCFM
BH-670	Netzsch Jet Mill Baghouse	PEK Filter	FKR-36/23/TR/SG	U200906/0110	2013	776 DSCFM @ 250 °F

Notes: SCFM = Standard cubic feet per minute
ACFM = Actual cubic feet per minute
DCFM = Dry Standard cubic feet per minute