

## TECHNICAL SUPPORT DOCUMENT (TSD)

July 24, 2015

### I. GENERAL COMMENTS:

#### A. Company Information

1. Granite Construction Company
2. Facility Address: 9301 South Swan Road, Tucson, AZ 85706  
Mailing Address: P.O. Box 27557, Tucson, AZ 85726

#### B. Background

This is the second renewal of the five (5)-year, air quality, individual permit issued to Granite Construction Company (GCC) for their Nonmetallic Mineral Mining/processing and Hot Mix Asphalt operation at the Swan Plant, located at 9301 South Swan Road, Tucson, AZ 85706. The initial startup date and PDEQ permit issuance for this facility was in 1994. Prior to the issuance of this current permit renewal, GCC had been operating on the expired version of the first five (5)-year renewal, issued on July 16, 2001.

#### C. Attainment Classification

This source is located in an area meeting attainment status for all pollutants.

### II. FACILITY DESCRIPTION

The facility is composed of six (6) stationary plants:

- Primary Crusher/Scalping Plant
- Wash Plant
- Secondary Wash Plant
- Mineral Aggregate Plant
- Aggregate Base Plant
- Hot Mix Asphalt Plant

The facility also declares two (2) optional use, portable plants permitted by Arizona Department of Environmental Quality (ADEQ):

- Portable Asphalt Rubber Blending Plant
- Portable Crushing and Screening Plant

Pima County Department of Environmental Quality (PDEQ) considers the portable plants as optional equipment, signifying that it does not constitute an “alternate operating scenario”. The source’s Potential to Emit (PTE) has been determined inclusive of this equipment and the methods of monitoring, recording and reporting emissions are identified in the permit for each portable plant.

#### A. Process Description and Operating Hours

The Primary Crusher/Scalping Plant crushes, screens and transfers mined materials to the Mineral Aggregate Plant and Wash Plant. This plant is subject to the New Source Performance Standard (NSPS) Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart 000.

The Mineral Aggregate Plant is fed from a conveyor linked to the Primary Crusher/Scalping Plant. The plant further crushes and screens material then transfers it to final product stockpiles as well as to other plants for further processing. This plant is subject to the New Source Performance Standard (NSPS) Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart OOO.

The Aggregate Base Plant is fed from the Mineral Aggregate Plant and contains a Lime Silo for the production of Aggregate Base Course (ABC) which is stockpiled and sold as final product. This plant is subject to the New Source Performance Standard (NSPS) Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart OOO.

The Wash Plant is fed from the Primary Crusher/Scalping Plant. This plant screens and washes material for end use products stored in stockpiles and feeds material to the Secondary Wash Plant. Equipment at this plant located upstream of the material saturation point, is subject to the New Source Performance Standard (NSPS) Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart OOO.

The Secondary Wash Plant further screens washed product and stockpiles material for end use. Equipment at this plant located upstream of the material saturation point, is subject to the New Source Performance Standard (NSPS) Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart OOO.

The ADEQ-permitted Portable Crushing and Screening Plant is used in line with the stationary plants to increase the production rate. GCC has declared a maximum of 2190 hours of use from this portable plant. The plant is subject to Portable Source Limitations of the ADEQ general permit with regards to operating in one (1) county.

GCC has declared an operational limit of 800 tons per hour, 16 hours per day, 365 days per year for the entire crushing and screening operation. Because no tonnage limitation was declared in the application, the previous permit's facility-wide, declared limit of 2,500,000 tons per year was carried over. The ADEQ-permitted, portable plant's output is counted towards this total. Note that GCC's historical rolling twelve (12)-month totals since 2001, show a maximum throughput of 1,509,435 tons of aggregate between April 2005 and March 2006. Most recently, and prior to May 2004, the totals have been less than one (1) million tons.

The stationary Hot Mix Asphalt (HMA) Plant produces asphaltic concrete products for sale. This plant is subject to the New Source Performance Standard (NSPS) Standards of Performance for Hot Mix Asphalt Facilities, 40 CFR 60 Subpart I.

The Portable Asphalt Rubber Blending Plant adds an additional asphalt heater for mixing a virgin oil product with crumb rubber solids to produce a viscous rubber mixture. This mixture is then used in the stationary HMA mixing process in place of the virgin oil.

GCC has not declared any operational limitations on the HMA Plant. The previous permit's declared operational limitation of 750,000 tons per year is carried over. Further, GCC has proposed and accepted (during source review of this permit) a voluntary 50% input limit from the Portable Asphalt Rubber Blending Plant. The source shall only produce 375,000 tons of final asphalt product during which time the portable plant is in use in any twelve (12)-month rolling period.

Historical, twelve (12)-month rolling totals peaked at 516,338 tons of asphalt product between November 2005 and October 2006.

## B. Applicability Categories

Applicability categories are: Crushing and Screening (non-metallic minerals), and Hot Mix Asphalt Production.

## C. Air Pollution Control Equipment

Dust collectors (Baghouses) control emissions from lime silos and the drum dryer/mixer and water spray nozzles are utilized to control dust at the screens, crushers, and elsewhere along the process. Fugitive emissions from haul roads are controlled by application of water using a water truck.

## III. REGULATORY HISTORY

### A. Testing & Inspections

American Environmental Testing, Inc. last performed EPA compliance testing on the HMA plant on July 25, 2001 to satisfy section V.C of the permit issued July 16, 2001. Because PDEQ has failed to issue a renewal until now, no tests have been required. This current permit issuance, as documented in section VI.A.2.a, requires a new test any time within the five (5)-year permit term.

Applicable initial performance tests have dutifully been submitted as part of permit revisions.

Full compliance inspections have been conducted by PDEQ on a regular basis since start up. The last inspection occurred in March of 2009, and the facility was determined to be in substantial compliance with permit conditions.

### B. Notices of Violation (NOV)

In 1997, an NOV was issued for using on-spec used oil at HMA without permit provision. Permit revision application was received and processed. No further action was required.

In 1999, an NOV was issued for recordkeeping deficiencies. Missing records were subsequently submitted. No further action was required.

### C. Permit Actions

**Table 1: Summary of Permit Actions Since Permit**

Date Received	Permit Action
08/12/2014	114-3P: Facility Change w/o Revision: Notification and approval to add feeder, crusher and 3 conveyors to the Primary Crushing and Scalping Plant.

## IV. EMISSION ESTIMATES

Emission estimates for the facility are derived from the use of ADEQ General Permit emission factors and AP-42 emission factors and are presented in the potential to emit (PTE) document. The choice to use ADEQ factors as the primary and AP-42 factors as secondary is justified by the multiple county-wide, as well as

state-wide, sources of similar operations who are granted ADEQ General Crushing & Screening/Hot Mix Asphalt Permits in which these same emission factors are used. ADEQ has also incorporated feedback from the Arizona Rock Product Association (ARPA) in their General Permit emission factors (ADEQ Letter to ARPA dated 4/07 is included in the PTE document.)

The following table outlines the Swan Plant's potential to emit (operating 8760 hr/yr) and actual potential to emit\*.

Pollutant (w/controls as claimed)	Potential to Emit (Operating 8760 hrs/yr) Tons per Year	Actual Emissions (Limited by Throughput) Tons per Year
Particulate Matter (as PM <sub>10</sub> )	149.46	38.88
Carbon Monoxide (CO)	279.35	53.95
Nitrogen Oxides (NO <sub>x</sub> )	191.78	40.27
Sulfur Oxides (SO <sub>x</sub> )	172.45	29.45
Volatile Organic Compounds (VOCs)	100.96	19.55
Hazardous Air Pollutants (HAPs)	29.22	6.10

\* The actual potential to emit detailed in the application is based upon the following enforceable operational conditions:

Crushing and Screening plants operating at a maximum throughput of 2,500,000 tons/yr,  
HMA operating at a maximum throughput of 750,000 tons/yr

The source is a synthetic minor for PM<sub>10</sub>, CO, NO<sub>x</sub>, SO<sub>x</sub>, VOCs and HAPs.

## V. APPLICABLE REQUIREMENTS

**This is not meant to be an exhaustive list of every regulation to which the Permittee is subject, but represents those cited in the permit. It is the responsibility of the Permittee to comply with all applicable regulations.**

### A. Code of Federal Regulations (CFR):

- 40 CFR 60 Subpart A (General Provisions)
- 40 CFR 60 Subpart OOO (NSPS Standards of Performance for Nonmetallic Mineral Processing Plants)
- 40 CFR 60 Subpart I (NSPS Standards of Performance for Hot Mix Asphalt Facilities)
- 40 CFR 279 Subpart B (Standards for the Management of Used Oil)

### B. Pima County Code (PCC) Title 17, Chapter 17.12:

- 17.12.040 Reporting requirements
- 17.12.045 Test methods and procedures
- 17.12.050 Performance tests
- 17.12.165 Permit application processing procedures for Class II and Class III permits
- 17.12.185 Permit Contents for Class II and Class III permits
- 17.12.190 Permits containing synthetic emission limitations and standards
- 17.12.300 Portable sources
- 17.12.520 Fees related to Class II and Class III permits

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

- 17.16.010 Local rules and standards; Applicability of more than one standard
- 17.16.020 Noncompliance with applicable standards
- 17.16.030 Odor limiting standards
- 17.16.040 Visible Emission Standards, Standards and applicability (including NESHAP)
- 17.16.050 Visibility Limiting Standard
- 17.16.060 Fugitive Dust Producing Activities
- 17.16.100 Particulate Materials
- 17.16.110 Storage Piles
- 17.16.130 Applicability
- 17.16.150 Hazardous waste, hazardous waste fuel, used oil, and used oil fuel burning equipment
- 17.16.370 Standards of Performance for Gravel or Crushed Stone Processing Plants

**D. Pima County Code (PCC) Title 17, Chapter 17.20:**

- 17.20.010 Source sampling, monitoring and testing
- 17.20.040 Concealment of emissions

**E. Pima County Code (PCC) Title 17, Chapter 17.24:**

- 17.24.020 Recordkeeping for compliance determinations

**VI. PERMIT CONTENTS**

The following section of the TSD refers to the conditions of the permit and explains in detail why the permit was written with the conditions seen.

**A. Applicability:**

Granite Construction Company is required to obtain a Class II permit for its Crushing and Screening/Hot Mix Asphalt operation, pursuant to PCC 17.12.140.B.2.a since the facility is subject to the NSPS for both Non-Metallic Mineral Processing Plants and Hot Mix Asphalt Facilities.

**B. Emission Limits/ Standards:**

1. NSPS Facilities

Primary Crusher/Scalping Plant, Mineral Aggregate Plant, Aggregate Base Plant, Wash Plant (pre-material saturation point), and Secondary Wash Plant (pre-material saturation point)

**II.A.1.a.i of the permit**

The opacity standards are taken directly from the 40 CFR 60, subpart OOO: 60.672(b). The regulations governing equipment constructed after April 22, 2008 became effective via a revision to subpart OOO on April 28, 2009.

This source has no facilities subject to 60.672(a) PM Standard due to the definition of “stack emission” in section 60.671 of subpart OOO.

**II.A.1.a.ii of the permit**

This verbiage is a combination of 40 CFR 60.672(d) and the definition of “truck dumping” as found in 40 CFR 60.671.

**II.A.1.b of the permit**

The Operation and Maintenance Requirement is a standard permit inclusion taken directly from 40 CFR 60.11 (d) with cited reference to PCC 17.16.020.A which states in part that “a source shall comply with a discharge standard of the full range of the source’s operating rates.”

2. NSPS Facility

Hot Mix Asphalt Plant

**II.A.2.a of the permit**

**II.A.2.a.i** of the Particulate Matter Standard is taken directly from the 40 CFR 60, subpart I: 60.92(a).

**II.A.2.a.ii** is a Material Permit Condition of the source’s voluntary acceptance of emission control using a declared baghouse.

**II.A.2.b of the permit**

The Fuel Limitation is predicated on the source voluntarily declaring the exclusive use of on-specification used oil as fuel for the drum dryer. PCC 17.16.150.B.1 states that the permit must include the “limitations on the types, amounts and feed rates of used oil.” These limits for on-spec used oil are found in 40 CFR 279.12. The voluntary declaration of the use of this fuel triggers a Material Permit Condition pursuant to PCC 17.12.185.A.2.

**II.A.2.c of the permit**

The Circumvention standard is taken directly from 40 CFR 60.12, however, the Permittee has asked that PDEQ permitting and compliance personnel be aware that voluntary, experimental dust control devices (dust curtains, dust boxes, etc) may be in place in problem areas (burner to slat, etc). These experimental items may eventually become part of the declared pollution control devices and added to the permit, but only upon declaration by the Permittee.

3. Non-NSPS Facilities

Wash Plant, Secondary Wash Plant and other Non-NSPS Equipment

**II.B.1.a of the permit**

The Process Weight Determination Requirement is taken directly from PCC 17.16.370.F.

**II.B.1.b of the permit**

The Fugitive Emissions Standard is taken directly from PCC 17.16.370.E.

4. Facility-wide Non-NSPS Requirement

**II.B.2.a of the permit**

Pollution Control Requirements:

**II.B.2.a.i** is a Material Permit Condition based upon the voluntary use of baghouses as a synthetic minor limitation.

**II.B.2.a.ii** is a Material Permit Condition based upon the enforceable air pollution control requirement to ensure compliance with PCC 17.16.100.A. The Permittee has asked that “dust curtains” be included to represent the in-house design, build and installation of experimental items used in problem areas.

**II.B.2.a.iii** is a Material Permit Condition based upon the enforceable air pollution control requirement to ensure compliance with PCC 17.16.370.D.

**II.B.2.b of the permit**

These Fugitive Emissions Standards are taken directly from PCC 17.16.060.A, PCC 17.16.100.C and PCC 17.16.110.A.

**II.B.2.c of the permit**

This Opacity Standard is taken directly from PCC 17.16.050 and Table PCC 17.16.130.B.1.

**II.B.2.d of the permit**

Concealment of Emissions verbiage is taken directly from PCC 17.20.040, however the Permittee has asked that PDEQ permitting and compliance personnel be aware that voluntary, experimental dust control devices (dust curtains, dust boxes, etc) may be in place in problem areas. These experimental items may eventually become part of the declared pollution control devices and added to the permit, but only upon declaration by the Permittee.

**II.B.2.e of the permit**

The Applicability of More Than One Standard verbiage is taken directly from PCC 17.16.010.B.

5. ADEQ-Permitted Portable Plants (Optional Use)

The EPA definition for “Alternative Operating Scenario” includes the criteria that a different set of applicable requirements is triggered. Because the optional use of the portable plant declared in this permit triggers no other applicable requirements than those already in effect for the stationary equipment, and because the portable plant’s emissions were considered in the overall PTE, the optional use of this plant was written into the body of the permit as opposed to separate attachments with repeated standards and limitations.

a. Portable Crushing and Screening Plant

**II.C.1.a of the permit**

GCC has proposed and accepted a voluntary maximum use of this plant equal to 2190 hours per year and 1,095,000 tons for any twelve-month rolling total. The production from this plant is to be counted as a portion of the source-wide operational limit of 2,500,000 tons, and not as an addition to that total.

**II.C.1.b of the permit**

As a portable source, permitted by ADEQ, the source is directed to follow notification procedures in PCC 17.12.300 C & E.

b. Portable Asphalt Rubber Blending Plant

**II.C.2.a of the permit**

GCC has proposed and accepted a voluntary maximum use of this plant equal to 50% of the total source-wide production of asphalt final product and a maximum of 375,000 tons in any twelve-month rolling total. The production from this plant is to be counted as a portion of the source-wide operational limit of 750,000 tons, and not as an addition to that total.

**II.C.2.b of the permit**

As a portable source, permitted by ADEQ, the source is directed to follow notification procedures in PCC 17.12.300 C & E.

6. Facility-Wide Operations

**II.D.1 of the permit**

In the absence of any newly declared, operational limitations in this application, GCC's voluntary operational limitations from the previous permit issuance of 2,500,000 tons of total aggregate production and 750,000 tons of total asphalt production during any 12-month, rolling total, have been carried over. "Production" is defined by the amount that passes through the plant, i.e. carried over and through the permitted equipment, for which PTEs were calculated. These Operational Limitations keep the emissions below the major source thresholds. Thus it is a Material Permit Condition.

**II.D.2 of the permit**

This Opacity Standard is taken directly from PCC 17.16.040 and Table PCC 17.16.040.

**II.D.3 of the permit**

These Visibility Standards are taken directly from PCC 17.16.050.

**II.D.4 of the permit**

This Odor Limiting Standard is taken directly from PCC 17.16.030. PDEQ compliance personnel do respond to odor complaints received. The Permittee may be asked to provide details for methods used to control odor during complaint investigations.

**II.D.5 of the permit**

This PDEQ permit standard dictates the source to follow notification requirements pursuant to PCC 17.12.245, PCC 17.12.255 or PCC 17.12.260 when making Facility Changes. As a synthetic minor, facility change notification is imperative for recalculating emissions and operational limitations.

**C. Monitoring Requirements**

1. NSPS Facilities

Primary Crusher/Scalping Plant, Mineral Aggregate Plant, Aggregate Base Plant, Wash Plant (pre-material saturation point), and Secondary Wash Plant (pre-material saturation point)

**III.A.1 of the permit**

This is the standard PDEQ daily opacity check and Method 9 follow-up requirement.

2. NSPS Facility

Hot Mix Asphalt Plant

**III.A.2.a of the permit**

These are the standard PDEQ monitoring requirements.

**III.A.2.b of the permit**

These are the standard PDEQ monitoring requirements. PDEQ and GCC agreed to 1-per-day check for source-wide congruency.

**III.A.2.c of the permit**

The onus is wholly upon the source to ensure compliance with the fuel standard; no recordkeeping or monitoring is required by PDEQ.

**III.A.2.d of the permit**

PDEQ defers to the manufacturer's recommendations for baghouse maintenance. If the Permittee does not have these onsite, they are required to submit Operations and Maintenance Plans for approval by the Control Officer prior to issuance of the permit. GCC advised in source review that baghouse inspections and maintenance will be performed according to their in-house O&M Plan. A copy is to be submitted for PDEQ's file.

3. Non-NSPS Facilities

Wash Plant, Secondary Wash Plant and other Non-NSPS Equipment

**III.B.1 of the permit**

These are the standard PDEQ monitoring requirements.

4. Facility-Wide Non-NSPS Requirements

**III.B.2.a of the permit**

These are the standard PDEQ monitoring requirements.

**III.B.2.b of the permit**

These are the standard PDEQ monitoring requirements.

5. ADEQ-Permitted Portable Plants (Optional Use)

III.C of the permit

The source must be able to show the total production of the portable plants over any 12-month rolling total to satisfy the voluntary, operational limitations, detailed in II.C.1.a and II.C.2.a of the permit.

6. Facility-Wide Operations

III.D.1 of the permit

The source must be able to account for the Operational Limitations voluntarily proposed and accepted to stay below major source thresholds. These limitations are based upon the combined emissions of the declared equipment, operating under declared parameters and producing a limited amount of product.

III.D.2 of the permit

These are the standard PDEQ monitoring requirements.

**D. Recordkeeping Requirements**

1. NSPS Facilities

Primary Crusher/Scalping Plant, Mineral Aggregate Plant, Aggregate Base Plant, Wash Plant (pre-material saturation point), and Secondary Wash Plant (pre-material saturation point)

IV.A.1 of the permit

These are the standard PDEQ requirements.

IV.A.2 of the permit

This requirement is the standard PDEQ requirement for baghouses.

2. Non-NSPS Facilities

Wash Plant, Secondary Wash Plant and Facility-Wide Non-NSPS

IV.B.1 of the permit

These are the standard PDEQ requirements

IV.B.2 of the permit

These are the standard PDEQ requirements.

3. ADEQ-Permitted Portable Plants (Optional Use)

IV.C of the permit

Documentation required for maintaining voluntary, operational limitations.

4. Facility-Wide Operations

IV.D.1 of the permit

Documentation required for maintaining synthetic minor status.

IV.D.2 of the permit

These are the standard PDEQ requirements.

IV.D.3 of the permit

This recordkeeping requirement is taken directly from PCC 17.24.020.A.

**E. Reporting Requirements**

1. NSPS Facilities

Primary Crusher/Scalping Plant, Mineral Aggregate Plant, Aggregate Base Plant, Wash Plant (pre-material saturation point), and Secondary Wash Plant (pre-material saturation point)

V.A.1 of the permit

**V.A.1.a** is taken directly from 40 CFR 60.676(f).

**V.A.1.b** was agreed upon during source review by GCC and PDEQ.

V.A.2 of the permit

**V.A.2.a** of the permit is taken directly from 40 CFR 60.7(a)(4).

**V.A.2.b** of the permit is taken directly from 40 CFR 60.676(a).

**V.A.2.c** of the permit is taken directly from 40 CFR 60.676(g).

2. Non-NSPS Facilities

Wash Plant, Secondary Wash Plant and Facility-Wide Non-NSPS

V. B of the permit

Relevant reporting requirements covered under the Additional Permit Requirements in the permit.

3. ADEQ-Permitted Portable Plants (Optional Use)

V.C of the permit

Relevant reporting requirements covered under the Additional Permit Requirements in the permit as well as the specific ADEQ general permit.

4. Facility-Wide Operations

**V.D of the permit**

Relevant reporting requirements covered under the Additional Permit Requirements in the permit.

**E. Testing Requirements**

1. NSPS Facilities

Primary Crusher/Scalping Plant, Mineral Aggregate Plant, Aggregate Base Plant, Wash Plant (pre-material saturation point), and Secondary Wash Plant (pre-material saturation point)

**VI.A.1.a of the permit**

The Initial Performance Testing requirement for NSPS equipment is taken directly from 40 CFR 60.8(a).

**VI.A.1.b of the permit**

**VI.A.1.b.i** cites test conditions as detailed in 40 CFR 60.8(c)

**VI.A.1.b.ii** cites test conditions as detailed in 40 CFR 60.8 (d) with amendments detailed in the NSPS subpart OOO (40 CFR 675(g)).

**VI.A.1.b.iii** cites test conditions as detailed in 40 CFR 60.8(f).

**VI.A.1.c of the permit**

The Opacity Testing Standards, while primarily based on EPA's Method 9, have additional requirements detailed in the NSPS subpart OOO at citation 40 CFR 60.675(c).

**VI.A.1.d of the permit**

Citation 40 CFR 60.670(d), of the NSPS subpart OOO, contains details for performance test exemptions.

2. NSPS Facilities

Hot Mix Asphalt Plant

**VI.A.2 of the permit**

These Particulate Matter Testing Requirements are taken directly from 40 CFR 60.93(b).

3. Non-NSPS Facilities

Wash Plant, Secondary Wash Plant and Facility-Wide Non-NSPS

**VI.B of the permit**

These are the standard PDEQ testing requirements.

4. ADEQ-Permitted Portable Plants (Optional Use)

**VI.C of the permit**

Testing for this equipment is under ADEQ direction, via ADEQ-issued permits.

5. Facility-Wide Operations

**VI.D.1 of the permit**

These are the standard PDEQ testing requirements.

**VI.D.2 of the permit**

These are the standard PDEQ testing requirements.

**VII. IMPACTS TO AMBIANT AIR QUALITY**

This is not a major source so no impact studies to ambient air quality are necessary.

**VIII. CONTROL TECHNOLOGY DETERMINATION**

Control technologies are not required for this facility-wide.

**IX. PREVIOUS PERMIT CONDITIONS**

Amended permit to include additional eq

**X. INSIGNIFICANT ACTIVITIES**

None identified by Granite Construction Company.