TECHNICAL SUPPORT DOCUMENT (TSD)
October 2015

I. GENERAL COMMENTS:

A. Company Information

1. CalMat Co. dba Vulcan Materials Co.

2. Facility Address: 5400 West Massingale Road, Tucson, AZ 85743
   Mailing Address: 2526 E. University, Phoenix, AZ 85034

B. Background

This operating permit is the second PDEQ air quality individual permit issued to CalMat Co., the Permittee, for their Nonmetallic Mineral Mining/processing and Concrete Batch Plant operation at the Ina Ready Mix Plant facility located at 5400 West Massingale Road, Marana, AZ 85743. The facility previously operated under PDEQ individual permit #2416, originally issued to Columbia Sand and Gravel in 1979. The permit was subsequently held by Blue Circle (1986), BCW, Inc. (1989), Sunward Materials (1991) and Cemex (2000), Staker Parson Companies, before now being issued to CalMat Co. Pima County Department of Environmental Quality (PDEQ) received a permit transfer application on June 18, 2015 detailing that CatMat Co., dba Vulcan Material Company had purchased the existing operations from Staker Parson Companies.

The permit moved from being under the ADEQ General Permit program to a PDEQ-issued individual permit in 2005.

C. Attainment Classification

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

II. FACILITY DESCRIPTION

The facility is composed of four stationary plants:

- Aggregate Plant
- Wash Plant
- Concrete Batch Plant A
- Concrete Batch Plant B

A. Process Description and Operating Hours

The Aggregate Plant crushes and screens pit-excavated material, some of which is treated with lime and sold as Aggregate Base Course (ABC), while the remainder is put through the Wash Plant for use in the Concrete Batch Plant production. This plant is subject to the New Source Performance Standard (NSPS) for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart OOO.

The Wash Plant is fed from a conveyor linked to the Aggregate Plant. Affected equipment at this plant prior to saturation of the transported material is subject to the New Source Performance Standard (NSPS) Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart OOO. Equipment located after the saturation of the transported material is not subject to any NSPS standards.

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The Concrete Batch Plant is a truck-mix operation, where final product is delivered off site. This plant is not subject to any NSPS standards.

The Ina Ready Mix Plant facility has taken a voluntary, total source limit of 1,500,000 tons of final aggregate product in any twelve (12)-month rolling total. A 1,410,000-ton (750,000 yd^3/year) limit, in any twelve (12)-month rolling total of final concrete production, has also been voluntarily declared.

B. Applicability Categories

Applicability categories are: Crushing and Screening (non-metallic minerals) and Concrete Batch Plant

C. Air Pollution Control Equipment

Per information submitted by the Permittee, water spray nozzles are located in the Aggregate Plant at the 60-foot conveyor (equipment # 47.8070) leading to the 54" roller cone crusher (equipment # 41.8603) ,at the rollercone crusher/conveyor and at the beginning of the stacker (equipment #47.8094). When determining PTE regarding controlled and uncontrolled emissions, PDEQ assigns uncontrolled factors to any equipment prior to a water spray nozzle. Controlled factors are applied to equipment at the location of, and downstream from, any water nozzle spray until the point at which dry material is introduced to the flow (crusher, grinder feeder, etc.).

At both Concrete Batch Plants, there is a dust collector used to control the loading of the cement silo, the supplemental (fly ash) silo and the dry batch load out. Fugitive emissions from haul roads are controlled by application of water using a water truck.

III. REGULATORY HISTORY

A. Testing & Inspections

This is the second permit issued to CalMat Co., at this facility. A PDEQ compliance inspection was conducted in 2014 while the facility was owned by Staker Parsons, and previous PDEQ compliance inspections were conducted while it was under PDEQ permit 2416, in 1985, 1988, 1989, 1990, 1991, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, and 2003. Compliance issues under the old permit holders included failure to declare NSPS equipment, failure to perform required Method 9 monitoring, as well as recordkeeping and reporting violations. There were two fugitive complaints in 2000, one for a cement silo and the other for a malfunctioning conveyor.

No initial performance test records were discovered for the existing NSPS equipment previously operated under permit #2416. Equipment was initially permitted under ADEQ and that agency would have received those reports. Any future equipment or existing equipment newly subject to II.A.1 and VI.A.1 of the Permit, will need to have Method 9 opacity tests submitted by CalMat Co.

B. Excess Emissions

There have been no excess emissions violations reported to date.

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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 Permit 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.) AP-42 is used exclusively for calculating the Concrete Batch Plant emissions. The ADEQ Concrete Batch Plant General Permit has an all-inclusive "controlled" emission factor limiting flexibility of calculation. Using AP-42 provides the more conservative calculations.

The following table outlines the Ina Facility'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 (PM)	212.00	70.00
Particulate Matter (as PM_{10})	119.00	25.00
Carbon Monoxide (CO)	0.08	0.07
Nitrogen Oxides (NO_X)	0.10	0.08
Sulfur Oxides (SO_X)	0.00	0.00
Volatile Organic Compounds (VOCs)	0.10	0.00
Hazardous Air Pollutants (HAPs)	0.00	0.01

* 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 1,500,000 tons/yr,
Concrete Batch Plants operating at a maximum throughput of 1,410,000 tons/yr

The source is a synthetic minor for PM and PM10, and a true minor for all other regulated pollutants.

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V. APPLICABLE REQUIREMENTS

A. Code of Federal Regulations (CFR):

40 CFR 60 Subpart OOO (NSPS Standards of Performance for Nonmetallic Mineral Processing Plants)

B. Pima County Code (PCC) Title 17, Chapters 17.12 & 17.16:

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.

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
17.12.520 Fees Related to Class II and Class III Permits
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 Standard
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
17.16.370 Standards of Performance for Gravel or Crushed Stone Processing Plants
17.16.380 Standards of Performance for Concrete Batch Plants

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:

CalMat Co. is required to obtain a Class II permit for this Crushing and Screening/Concrete Batch operation, pursuant to PCC 17.12.140.B.2.a since the facility is subject to the NSPS for the Non-Metallic Mineral Processing Plant.

B. Emission Limits/ Standards:

1 NSPS Facility (Aggregate Plant)
<u>II.A.1 of the permit</u>

The Opacity Standards are taken directly from the 40 CFR 60, subpart OOO: 60.672. The Permittee does not operate a capture device on any of the OOO-subject equipment and cannot stack test for PM.

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II.A.2 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."

II.A.3 of the permit

This circumvention standard is taken from 40 CFR 60.12.

II.A.4 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 limitation.

2. Non-NSPS Facility (Wash Plant)

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.

II.B.1.c 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 limitation.

3. Non-NSPS Facility (Concrete Batch Plant)

II.B.2.a of the permit

This requirement is taken from Pima County Code 17.16.380, Standards of Performance for Concrete Batch Plants.

II.B.2.b 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 limitation.

4. Facility-wide Non-NSPS Requirement

II.B.3.a of the permit

Pollution Control Requirements:

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II.B.3.a.i is based on standard PDEQ language for the use of pollution control units such as baghouses where ADEQ/AP-42 "controlled" emission factors use the maximum 99.9% possible efficiency of these units, allowing for a great discount of PM10 by sources. It is imperative these units operate at maximum efficiency. Older units may not have manufacturer specifications available and the option to create an "in-house" Operations and Maintenance Plan to be submitted for approval prior to issuance of the permit, allows for the source to still take advantage of the intent of the requirement. PCC 17.12.185.A.2 is used as the authority for this permit condition.

II.B.3.a.ii is a Material Permit Condition based upon the enforceable air pollution control requirement to ensure compliance with PCC 17.16.100.A.

II.B.3.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.3.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.3.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.3.d of the permit

Concealment of Emissions verbiage is taken directly from PCC 17.20.040.

II.B.3.e of the permit

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

II.B.3.f 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 limitation.

5. Facility-Wide Operations

II.C.1 of the permit

The Permittee has voluntarily taken a production limit of 1,500,000 tons of total aggregate production and 1,410,075 tons of batched concrete during any 12-month, rolling total. "Production" is defined by the amount that passes through the plants, i.e. carried over and through the permitted equipment, for which PTE was calculated. These Operational Limitations keep the emissions below the major source thresholds. Thus it is a Material Permit Condition

II.C.2 of the permit

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

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II.C.3 of the permit

These Visibility Standards are taken directly from PCC 17.16.050.

II.C.4 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 limitation.

II.C.4 of the permit

The 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.C.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 limitation.

C. Monitoring Requirements

1. NSPS Facility (Aggregate Plant)

III.A of the permit

Visual opacity checks required at least once per day and Method 9 conducted on any visual plumes. Excessive emission of a crusher is 15%.

2. Non-NSPS Facility (Wash Plant)

III.B.1 of the permit

These are the standard PDEQ monitoring requirements.

3. Facility-Wide Non-NSPS

III.B.2.a of the permit

This is standard PDEQ language for the use of pollution control units such as baghouses where ADEQ/AP-42 "controlled" emission factors use the maximum 99.9% possible efficiency of these units, allowing for a great discount of PM10 by sources. It is imperitive these units operate at maximum efficiency.

III.B.2.b of the permit

PDEQ consciously chooses not to follow the lead of ADEQ's general permit standard of "monthly survey of visible emissions." PDEQ believes daily visual checks are not burdensome on the Permittee and ensure timely response to any excess emissions.

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4. Facility-Wide Operations

III.C.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.C.2 of the permit

These are the standard PDEQ monitoring requirements. Frequency changed from "once per shift" to "once per day" for congruence within the permit and congruence with other issued permits

D. Recordkeeping Requirements

1. NSPS Facility (Aggregate Plant)

IV.A of the permit

These are the standard PDEQ requirements.

2. Non-NSPS Facility (Wash Plant)

IV.B.1 of the permit

These are the standard PDEQ requirements.

3. Facility-Wide Non-NSPS Facility

IV.B.2 of the permit

These are the standard PDEQ requirements.

4. Facility-Wide Operations

IV.C.1 of the permit

Documentation required for maintaining synthetic minor status

IV.C.1 of the permit

These are the standard PDEQ requirements.

IV.D.2 of the permit

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

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E. Reporting Requirements

1. NSPS Facility (Aggregate Plant)

   V.A.1 of the permit

   V.A.1.a of the permit is taken directly from 40 CFR 60.676(f).

   V.A.1.b of the permit is congruent with other permits issued by PDEQ

   V.A.2 of the permit

   V.A.2.a of the permit is taken directly from 40 CFR 60.7(a) (4), referred to from 40 CFR 670(f) and Table 1 to Subpart OOO of 40 CFR 60.

   V.A.2.b of the permit is taken 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

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

3. Facility-Wide Operations

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

F. Testing Requirements

1. NSPS Facility (Aggregate Plant)

   VI.A.1 of the permit

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

   VI.A.2 of the permit

   VI.A.2.a cites test conditions as detailed in 40 CFR 60.8(c)

   VI.A.2.b 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.2.c cites test conditions as detailed in 40 CFR 60.8(f).

   VI.A.3 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).

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VI.A.4 of the permit

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

2. Non-NSPS Facilities

VI.B of the permit

These are the standard PDEQ testing requirements and apply to facility-wide non-NSPS.

3. Facility-Wide Operations

VI.C.1 of the permit

These are the standard PDEQ testing requirements.

VI.C.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

Upon inspection of the facility it was discovered that one of the screen's manufacture date was post April 2008 and hence the screen has a more stringent opacity standard than what was in the previous permit.

X. INSIGNIFICANT ACTIVITIES

None identified by CalMat Co.

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