

DRAFT

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION

MEMORANDUM

March 11, 2016

TO: *PF* Phillip Fielder, P.E., Permits and Engineering Group Manager

THROUGH: *RG* Rick Groshong, Senior Environmental Manager
Compliance and Enforcement

THROUGH: *RK* Richard Kienlen, P.E., Engineering Manager, New Source Permit Section
PM Phil Martin, P.E., Engineering Manager, Existing Source Permits Section
LW Lee Warden, P.E., Engineering Manager, Engineering Section

SUBJECT: General Permit to Construct/Operate
Minor Source Nonmetallic Mineral Processing Facilities

FROM: *MC* Mark Chen, P.E., New Source Permits Section

SECTION I. INTRODUCTION

The Nonmetallic Mineral Processing Facilities (NMPF) General Permit (GP), issued originally on May 9, 2000, was developed to authorize construction and/or operation of facilities whose primary air pollutant (particulate matter) emissions are from the mining or quarrying of nonmetallic minerals. The minor facility GP as originally issued has an indefinite term—it is effective until modified or cancelled. Because of significant changes in rules and regulations since its issuance, this GP was updated and modified for the first time on August 13, 2007. At the present time, this GP is updated and modified again to provide a revised comprehensive discussion and applicable rules for the affected industries.

The affected industries also include plants engaged primarily in preparation of products through crushing, grinding, pulverizing, and washing processes, as well as other processes to treat non-metal minerals that are classified as mining facilities, whether or not they operate in conjunction with mines (Reference 1). All of these facilities are typically categorized under a SIC code major grouping of 14 -- Mining and Quarrying of Nonmetallic Minerals, Except Fuels.

In Oklahoma, most of the nonmetallic mining is directed to recovery of limestone, followed by sand and/or gravel, coal, and then granite and other minerals such as iodine, gypsum, clay, salt, etc. (Reference 2). No metal mining is currently performed in Oklahoma (Reference 2). This General Permit addresses only the mining and processing of non-fuel, nonmetallic minerals. Coal mining/processing operations are excluded because they typically include the use of drying operations not usually associated with other mineral and mining operations.

Applicants with the same or substantially similar operations, emissions, activities, and facilities which emit the same types of regulated air pollutants, which are subject to the same or similar standards, limitations, operating requirements, and monitoring requirements, can be covered under this permit. Permits issued to these facilities must address all air emissions from all sources at these facilities. Thus, the permit is designed to include those sources typically expected to be present at these facilities, including crushers, grinders, mills, screens, elevators,

conveyors, bagging operations, loading areas, fuel storage tanks, internal combustion (IC) engines, other/miscellaneous equipment, fugitives from roads, stockpiles, and explosive detonation events. Other facilities which perform similar crushing, pulverizing, or other treating activities, such as batch processing cement and asphalt plants or manufacturers of "earthen" materials (glassware, gypsum board, pottery, etc.), will not be eligible for coverage under this General Permit since they typically include additional significant emission sources, e.g., dryers, kilns, and furnaces.

In the Memorandum of the original NMPF-GP, issued on May 9, 2000, a statistical table, Table 1, shows the number of facilities in the SIC 14 category, which may be located in Oklahoma that are potentially eligible for coverage under this permit.

**TABLE 1
 OKLAHOMA FACILITIES IN SIC CODE MAJOR GROUP 14**

SIC#	Industry Title (Nonmetallic/Non-Fuel)	No. Facilities Reporting	
		USEPA*	AQD
1411	Dimension Stone	0	1
1422	Crushed & Broken Limestone	56	40
1423	Crushed & Broken Granite	3	2
1429	Crushed and Broken Stone (Other)	5	0
1442	Construction Sand & Gravel	13	0
1446	Industrial Sand	12	4
1499	Miscellaneous Nonmetallic Minerals	4	3
Totals =>		83	50

*Including NPDES-permitted facilities (Reference 3).

As of December 28, 2011, a total of 180 facilities were registered in the SIC 14 category in TEAM, which is AQD's database. Among 180 facilities, 166 facilities have currently active AQD permits. Table 2 shows the issued permits based on the SIC code. Among 166 permits, 5 permits are major source permits and the other 161 are synthetic minor/minor source permits.

**TABLE 2
 OKLAHOMA PERMITS IN SIC CODE MAJOR GROUP 14**

SIC#	Industry Title (Nonmetallic/Non-Fuel)	No. of Facilities Having Permits		
		Major	Syn-Minor	Minor
1411	Dimension Stone	----	1	1
1422	Crushed & Broken Limestone	1	46	54
1423	Crushed & Broken Granite	----	1	2
1429	Crushed and Broken Stone (Other)	----	14	6
1442	Construction Sand & Gravel	----	4	15
1446	Industrial Sand	4	2	1
1455	Kaolin and Ball Clay	----	----	1
1481	Nonmetallic Minerals Services	----	1	----
1499	Miscellaneous Nonmetallic Minerals	----	2	10
Totals =>		5	71	90

As of December 28, 2011, among 161 permits issued to the SIC 14 category facilities, 104 permits are in the NMPF-GP category, which is 65%. This figure indicates that the majority of the facilities in the industries choose NMPF-GP for their permits instead of individual permits.

SECTION II. FACILITY DESCRIPTION

A significant portion of the industry background information in this section was excerpted or developed from the EPA Office of Compliance Sector Notebook Project: Profile of the Non-Fuel, Non-Metal Mining Industry, EPA 310-R-95-011, September 1995 (Reference 1). Thus, a specific reference is not provided for each excerption.

Activities typically associated with the non-fuel, non-metal mining and processing industry include drilling into and blasting of stone (quarrying), mining/dredging sand and gravel pits, primary and subsequent crushing, screening and grinding/milling of stone and gravel to the desired aggregate size(s), and washing and conveying/hauling/stockpiling of aggregate and sand. The sand and aggregate are then distributed to cement and asphalt batch plants, Portland cement kilns, high purity silica processors, and to other wholesalers and retailers. Other activities include fueling of dozers, haul trucks, and engines that power production line equipment. Gasoline and diesel storage tanks at these facilities are typically aboveground horizontal tanks with capacities less than 40,000 gallons.

Rock Mining

Surface or open-pit mining requires extensive blasting, as well as rock, soil, and vegetation removal to reach mineral deposits. Waste rock, or overburden, is piled away from the mine. Benches are cut into the walls of the mine to provide access to progressively deeper stone, as the upper-level formation is depleted.

The extraction of minerals from the earth often involves the use of mechanical means such as drilling and/or blasting operations using explosives. Blasting fragments the deposit into sizes that require a minimum of secondary breakage, and that can be handled by loading and hauling equipment. The explosive charge is usually a mixture of ammonium nitrate and (5.8 - 8%) fuel oil. However, dynamite (ammonia or gelatin form) may also be used. (Reference 5, Section 13.3). Drop ball cranes may be used for secondary breakage.

The excavation and loading of broken rock is normally performed by mechanical shovels and front-end loaders. The broken rock is then loaded into a vehicle, such as a truck or railroad track-type car for transport to a processing plant or to a primary crusher. At most quarries, large capacity haulage vehicles are used to transport broken rock from the quarry to the primary crusher. Pipelines have also been used successfully to transport many different minerals, such as limestone, phosphates, and sand fills. The dry material is first combined with water to form slurry, and is then pumped to its destination for dewatering. If sufficient dump room or storage capacity exists near the mine, a system of belt conveyors can be used to handle material at high rates. Factors that determine the practicality and size of a conveyor system include the rates at which the material must be handled, the material's density and stickiness, the dusting or degradation on transfer, and the need for the system to handle more than one product.

Mineral Processing

Processing minerals after their extraction and transportation to the processing plant involves the use of crushers, grinders, and screens. This equipment is used to separate or scalp larger boulders from the fines that do not need primary crushing, thus minimizing the load to the primary crusher. Processing of dimension stone begins with sawing the excavated rock into slabs using a rotating diamond or circular saw. Water is used to cool the saws and remove particles. After the stone has been cut to the desired size, it is finished using natural and synthetic abrasives. Processing of crushed and broken stone, including riprap and drilling of dimension stone is ordinarily done with tricone rotary drills, long-hole percussion drills, and churn drills. Blasting in smaller operations may be done with dynamite but most medium to large-size operations use ammonium nitrate/fuel oil mixtures.

Sand and Gravel Extraction

Sand and gravel are the unconsolidated granular materials resulting from the natural disintegration of rock and stone. Sand and gravel deposits are commonly found adjacent to or in river courses or in areas with glaciated or weathered rock. Such deposits often contain the fine alluvial silt that is the primary source of process and fugitive dust from sand and gravel operations.

There are two main types of sand and gravel. Construction sand and gravel are used mainly in concrete, road-base, asphaltic concrete aggregates, and construction fill. Generally, the physical characteristics of construction sand and gravel and their proximity to construction sites are more important than their chemical characteristics. Industrial sand and gravel are used mainly in manufacturing glass, ceramics, and chemicals. The chemical and physical characteristics of industrial sand and gravel are very important to their end users, and are therefore subject to stricter chemical and physical characterization than construction sand and gravel.

Loose sand and gravel deposits are usually mined without the necessity of drilling and blasting. On rare occasions, blasting with light charges is used to loosen deposits.

Extraction and mining is done by any number of methods, depending on whether the deposit is above or below the water table. Where sand and gravel are above water, extraction is done by power shovels, drag line scrapers, and/or highly mobile, rubber-tired front-end loaders.

When the sand and gravel deposit is consolidated to the point where digging with a front-end loader or power shovel is too difficult, a bulldozer equipped with a ripper is used to loosen the material. A ripper consists of a large tooth (or series of teeth) which is attached to the rear of the bulldozer. Materials being mined below the water, in rivers, estuaries, and lakes must be removed by specialized equipment. This equipment includes dredges, draglines and floating cranes.

SECTION III. AIR EMISSIONS

Criteria Pollutants

Particulate matter is the pollutant produced in the greatest quantity from mining and subsequent processing of nonmetallic minerals. Surface mining activities such as removal, rock drilling, blasting, loading, hauling, and stockpiling of overburden and rock all contribute to particulate emissions. About 5% of the facilities are powered by internal combustion (IC) engines, emitting nitrogen oxides (NOx) and carbon monoxide (CO) and lesser amounts of the other criteria pollutants. Blasting activities emit CO, NOx, hydrogen sulfide (H₂S), and sulfur dioxide (SO₂) (Reference 5, Section 13.3). Small amounts of volatile organic compounds (VOCs) are emitted from storage tanks holding diesel and gasoline and even lesser amounts of fugitives from the associated piping.

The greatest potential for particulate emissions from these facilities comes from grinding/milling, crushing, screening, and transporting activities (References 1, 4). The number of facilities reporting total suspended particulate (TSP) emissions in 1995 is given in Table 2 (as per permit continuum thresholds).

**TABLE 2
 OKLAHOMA FACILITIES BY CONTINUUM CATEGORY**

SIC #	Industry Type	Total Suspended Particulate (TPY)				Total
		< 5	5 - 40	40 - 99	>=100	
1422	Crushed & Broken Limestone	4*	11	16	9	40
1423	Crushed & Broken Granite	1	-	-	1	2
1446	Industrial Sand	-	1	3	-	5
1499	Miscellaneous Nonmetallic Minerals	-	3	-	-	3
TOTALS =>		5	15	19	10	50

*Includes 3 idle facilities.

In 1996, facilities started reporting PM₁₀ rather than TSP. As a result, few of the facilities in Oklahoma remain classified as Major sources. In Oklahoma, non-fuel, non-metal mining facilities typically report only PM₁₀ emissions, but other criteria pollutants at relatively lower levels have been reported. As reported nationally, PM₁₀ makes up about 50% of total criteria pollutants emitted from these facilities. In Oklahoma, most of these facilities power their (stationary) machinery with electricity. However, some have diesel or natural gas fired IC engines. Some of the larger operations may potentially have PM₁₀ emissions greater than 100 TPY. However, both reported emissions inventory data submitted to DEQ, and currently permitted emissions levels are well below 100 TPY. This is primarily due to the use of control devices which include capture systems, enclosures, wet scrubbers, baghouses, and certain work practices, such as dust suppression.

Emissions estimates from nonmetallic mineral processing facilities can be made using data available from AP-42. Emission factors for particulate matter have been developed for the various emission points, including processing operations and fugitives. These factors were based on actual emissions tests at several facilities. However, in some cases limited data was available to calculate specific factors. Thus, some factors are not rated as reliable as others. Incorporation of a reasonable safety factor may be appropriate in developing final estimates.

Hazardous Air Pollutants

In Oklahoma, these facilities have not reported emissions other than criteria pollutants. Depending on the mineral being mined, inorganic Hazardous Air Pollutants (HAPs) have the potential to be emitted as particulates during quarrying and processing, or as a fugitive (road dust or stockpiles). However, unlike criteria pollutants, data is not available in AP-42 to estimate HAP emissions associated with particulates from these facilities. The Air Quality Division reserves the right to reopen this permit if better data becomes available that demonstrates the potential for HAP emissions to violate an applicable requirement.

In addition, organic HAPs may be emitted from storage tanks holding fossil fuel, typically diesel or gasoline, and associated equipment, or from the incomplete combustion of fossil fuel. However, toxic emissions from these sources are anticipated to be negligible.

SECTION IV. PERMIT STRUCTURE

The general permit for nonmetallic mineral processing facilities is designed to allow only minor facilities to obtain either a construction permit or operating permit for modifications to existing facilities or initial construction and operating permits for new facilities. It has been developed to include requirements for all sources with emissions above the de minimis level of 5 TPY but less than 100 TPY. Thus, facilities typically eligible for Permit by Rule (< 40 TPY) or a minor facility permit (< 100 TPY) may obtain coverage under this permit if they meet the eligibility requirements. Major sources (\geq 100 TPY of any criteria pollutant and/or facilities emitting above 10 TPY of any single HAP or 25 TPY of a combination of HAPs) will need to obtain coverage under an individual permit.

The general permit is structured so that eligible facilities can obtain an Authorization to Construct and Authorization to Operate under the permit, or can obtain an individual construction permit and then an Authorization to Operate under the permit. This should allow applicants the greatest flexibility for obtaining coverage under the permit. In addition, no site-specific determinations can be made in issuance of an Authorization under a general permit. However, once these site-specific determinations have been completed and drafted into a construction permit as specific conditions or emissions limitations, they can then easily be incorporated into the Authorization to Operate under a general permit.

In addition, certain other options usually available by regulation had to be disallowed so that no site-specific determinations were made in issuance of an Authorization to Construct under the general permit. For example, alternate emissions reduction authorizations are not allowed under

an Authorization to Construct under this permit. Development of these site-specific limitations requires Air Quality Council approval. Likewise, several regulations allow exceptions from specific requirements by showing that they are unreasonable, "if approved by the Executive Director." These approvals also require a site-specific determination that cannot be reasonably made in issuance of an Authorization to Construct under this permit.

All conditions in the permit have been derived directly from applicable requirements given in OAC 252:100 - Air Pollution Control, as promulgated to implement the Oklahoma Clean Air Act. The permit is formatted so that specific conditions are given for each emissions unit allowed under the permit, i.e., processing equipment, storage tanks, and IC engines. In order to streamline the permit, specific conditions to assure compliance with fugitive emissions requirements were incorporated in the facility-wide section rather than being addressed in a separate stand-alone section. Each section contains a list of operational conditions, emissions limitations, and monitoring and recordkeeping conditions developed to assure compliance with applicable requirements. Conditions to assure compliance with those state regulations that implement federal requirements, e.g., NESHAP, NSPS Subpart OOO (Nonmetallic Mineral Processing), are incorporated as a specific condition for the permit. Associated monitoring and recordkeeping generally follows the same process, e.g., NSPS, Subpart Kb, Section 60.116b (Organic Liquid Storage Vessels). These emission unit-specific conditions, as required by Oklahoma regulations, are generally established in the Authorization to Construct under this permit, or by an individual permit, then incorporated into a subsequently issued Authorization to Operate for the facility. Additionally, a section of standard conditions is established to contain those requirements applicable to all minor facilities.

Because of the nature of the emission units at the facility, specific numeric emissions limitations are not required to be developed for all emission units covered under all Authorizations to Construct/Operate under the permit. In general, specific numeric emissions limitations are required for those sources that have the potential to exceed a threshold value or violate an applicable requirement. They are established from applicable requirements given in the rules, from limitations that the source assumes to avoid an applicable requirement, or from limitations established in previously issued state or federal permits for the facility. Provided, that source-assumed limitations and/or limitations from previously issued permits are equivalent or more stringent than those established from applicable requirements given in the permit. The permit establishes these limitations as a facility-wide cap on emissions from the facility, rather than establishing limitations on individual emission units. The general permit for minor facilities establishes these limitations as a facility-wide cap, not to equal or exceed 100 TPY of any regulated pollutant, 10 TPY of any single HAP, or 25 TPY of all HAPs.

Calculation of actual emissions is required as a compliance demonstration method where a specific numerical limitation is given in the permit. This is typically given on a monthly and 12-month rolling total basis calculation. However, other shorter-term calculations may be required for a particular requirement. A direct comparison of the calculated emissions can then be compared to the permitted level to determine compliance with the specific condition in the permit. In those cases where a numerical limitation is not specifically developed to demonstrate compliance, other methods (e.g., work practices, parametric monitoring, modeling analyses, etc.)

are required by the permit to assure compliance. These are specified as "Operational conditions" in the permit.

This approach should greatly reduce the burden on both the permittee and AQD by eliminating the need for construction permits, permit modifications, or new Authorizations when making certain changes to the facility. Notification to DEQ within 10 days following the start of operation is required for certain specified changes that do not result in an exceedance of the facility-wide emissions cap previously established in an Authorization to Operate.

SECTION V. ELIGIBILITY

In order to provide the broadest coverage to applicants under this permit and to assure compliance with all applicable requirements, eligibility must be restricted to those minor facilities whose emission units are addressed in this permit. The permit has been developed for a facility designed and operated for the primary purpose of mining and processing non-fuel/nonmetallic minerals.

Emission units identified as typically present at such a facility, and addressed in the permit, include crushers, grinders, screening devices, conveyors, diesel or natural gas fired internal combustion engines, fuel storage tanks, and fugitive emissions sources. In addition, those emission units identified as de minimis are also recognized as typically present at such a facility, and are addressed in the permit. Any other emission units subject to an applicable requirement not included in this permit makes that facility ineligible for coverage under this permit.

Facilities with emissions units subject to NSPS requirements under 40 CFR Part 60; Subpart A, Subpart I, Subpart Kb, Subpart GG, Subpart OOO, Subpart IIII, and/or Subpart JJJJ are generally eligible for this permit. Facilities with emissions units subject to NESHAP requirements under 40 CFR Part 63; Subpart A and/or Subpart ZZZZ are generally eligible for this permit.

In general, the following facilities are not eligible for coverage under this permit.

1. Facilities for which material facts were misrepresented or omitted from the application and the applicant knew or should have known of such misrepresentation or omission.
2. Facilities with emissions units subject to:
 - a. OAC 252:100-8 (Permits for Part 70 Sources).
 - b. OAC 252:100-17 (Incinerators).
 - c. OAC 252:100-23 (Cotton Gins).
 - d. OAC 252:100-24 (Grain, Feed, or Seed Operations).
 - e. OAC 252:100-33 (Control of Emissions of Nitrogen Oxides).
 - f. OAC 252:100-35 (Control of Emissions of Carbon Monoxide).
 - g. 40 CFR Part 59 (National VOC Standards).
 - h. 40 CFR Part 82, Subparts A, B, & C (Stratospheric Ozone Protection).
 - i. 40 CFR Part 264 (Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities).

The following facilities, unless qualified as a de minimis activity under OAC 252:100, Appendix H, are not eligible to obtain an Authorization to Construct under this permit, but may be eligible for coverage under an Authorization to Operate if they obtain an individual construction permit and all relevant requirements and limitations in that permit are incorporated into the Authorization to Operate.

1. Facilities with fuel-burning equipment fired with fuels other than: natural gas, liquid petroleum gas (LPG), diesel (with < 0.8 wt% sulfur), or #2 through #6 fuel oil (with < 0.8 wt% sulfur).
2. Facilities with heaters having rated heat inputs of 50 MMBTUH or more.
3. Facilities that store VOCs with a vapor pressure greater than 1.5 psia in storage tanks built after December 28, 1974, with a capacity greater than 151 m³ (40,000 gallons), or with a capacity greater than 400 gallons that are not equipped with a submerged fill.
4. Facilities located in Tulsa County which store gasoline or other VOCs (with vapor pressure greater than 1.5 psia) in storage tanks with a capacity greater than 2,000 gallons.
5. Facilities that store organic liquids other than liquid fuels (i.e., residual oil, distillate oil, or gasoline) unless qualified as a de minimis activity under OAC 252:100, Appendix H.
6. Facilities that use combustion devices (such as flares, incinerators or thermal oxidizers) to control emissions of VOCs. This does not include flares subject to the control requirements of 40 CFR Part 60, Subpart A.
7. Facilities located in an area that is federally designated as non-attainment.
8. Facilities that request an Alternative Emissions Reduction Authorization under OAC 252:100-11.
9. Facilities that request to install equipment subject to federal regulations not included in this General Permit.
10. Facilities with engines that use emission controls unless the engine is subject to federal standards and the controls are used to meet those standards.

The DEQ may not issue a permit authorization sought by an applicant that has not paid all money owed to the DEQ or is not in substantial compliance with the Environmental Quality Code, rules of the Board and the terms of any existing DEQ permits and orders. The DEQ may impose specific conditions on the applicant to assure compliance and/or a separate schedule that the DEQ considers necessary to achieve required compliance.

Facilities that are not in compliance with all applicable State and Federal air requirements may become eligible for coverage under this permit through submission of a compliance plan meeting the requirements of Part 3 of this Permit.

In addition, the DEQ may refuse issuance of an authorization to an applicant even though the facility meets the above eligibility criteria. In such cases, DEQ will provide the facility a written explanation providing the reason(s) for the decision. This is necessary to handle certain situations where a particular emissions unit is not expected to be present at such facilities, but gives the agency the discretion to make the final decision as to whether coverage is appropriate.

SECTION VI. APPLICABLE RULES AND REGULATIONS

Applicable rules and regulations are given below for each emission unit authorized in this permit, including facility-wide requirements, processing equipment, storage tanks, engines, and fugitive emissions. For brevity, only those applicable requirements that are specific to the particular emissions unit, and not addressed in the Facility-wide requirements, are covered in each section. In addition, the description of the applicable requirement may also be abbreviated to save space. For a more lengthy description, refer to the particular rule.

A. FACILITY-WIDE REQUIREMENTS

1. Oklahoma Air Pollution Control Rules

OAC 252:100-1 (General Provisions) [Applicable]

Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]

Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emissions Inventory, & Annual Operating Fees) [Applicable]

Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants.

This permit assures compliance with this regulation using the following approach:

A standard condition in the permit requires the permittee to file an annual emissions inventory and pay annual fees based on either emission inventories or allowable emissions.

OAC 252:100-7 (Permits for Minor Facilities) [Applicable]

Part 1 includes definitions and subjects all permitting to the tiered Uniformed Permitting Act. Permits are required to meet public review requirements consistent with the Tier System given in the Uniform Permitting Act.

Part 2 establishes fees for construction and operating permits, Authorizations issued under General Permits, and applicability determinations.

Part 3 establishes construction permit categories and requirements, including that a construction permit require the permittee to comply with all applicable air pollution rules, federal NSPS, and NESHAP established under Sections 111 and 112 of the Federal Clean Air Act, and to not exceed ambient air quality standards. A construction permit and subsequent operating permit is required for new facilities. A permit modification is also required when making certain modifications to a facility.

Part 4 establishes operating permit requirements and requires demonstration of compliance with the emission limits and air pollution control requirements of the construction permit. No specific emission limitation, work practice condition, or other emission standard, or criterion is specified in this subchapter.

This permit assures compliance with this regulation using the following approach:

The permit is designed to allow minor facilities to fulfill the requirement to obtain an Authorization to Construct and an Authorization to Operate before starting construction and operation of an eligible facility, or for modifications to existing eligible facilities. A Notice of Intent (NOI) to Construct is required prior to commencing construction or installation of any new facility other than a de minimis facility. Coverage under the general permit is effective upon receipt of the NOI to Construct by the AQD. The earliest of (1) a legible dated U.S. Postal Service postmark (private metered postmarks are not acceptable); (2) a dated receipt from a commercial carrier or the U.S. Postal Service; or (3) a DEQ date stamped application, is acceptable documentation of receipt of the NOI. After construction is complete, an NOI to Operate must be submitted within 180 days of start-up.

The general permit has gone through Tier II review; therefore, only Tier I review will be provided for any Authorizations issued hereunder. In lieu of an Authorization to Construct, an applicant may obtain a minor source construction permit, and then apply for an Authorization to Operate under this permit. Permit conditions have been included in the permit which provide that conditions from a minor source construction permit can be incorporated into the Authorization to Operate as long as the conditions are equivalent to or more stringent than the corresponding conditions in the General Permit. Operational conditions have been included in the permit to require a source to construct and operate all emission units and associated control equipment within a practical range of operating conditions so as to achieve, on a continuous basis, a level of emissions that complies with applicable requirements. Operating and compliance requirements, as well as monitoring and recordkeeping requirements for control devices are specifically addressed in the permit. An initial compliance inspection of the facility may be conducted by the AQD prior to issuance of the Authorization to Operate. Conditions have also been included in the permit to require a compliance demonstration prior to issuance of an Authorization to Operate and continuing compliance demonstrations to assure that the source continues to meet applicable requirements. Compliance with the facility-wide emissions cap shall be determined by calculating the actual emissions from all emission units located at the facility. Such emissions estimates shall be calculated as specified in the specific conditions for each particular emissions unit, or for equipment not specified, using manufacturer's data, EPA approved emissions software, DEQ approved estimation methods, testing data, or the latest approved version of AP-42, Compilation of Air Pollution Emission Factors. Emissions limitations are required for those sources that have the potential to violate an applicable requirement. These limitations are established as part of the facility-wide emissions cap, not to equal or exceed 100 TPY of any criteria pollutant, nor to equal

or exceed 10 TPY of any single HAP, or 25 TPY of all HAP. Specific conditions are also included in the permit to address any ambient air quality standards or NSPS and NESHAP requirements. Currently, under Oklahoma's State Implementation Plan (SIP), minor facilities are not required to demonstrate compliance with the NAAQS. However, a condition is included in the permit that requires the facility to meet the ambient air quality standards. The permit allows facilities that become subject to an NSPS or NESHAP to incorporate those requirements into an Authorization to Operate. A minor source construction permit must be issued for the modification of an existing facility that is adding equipment subject to an NSPS or NESHAP not otherwise addressed in the permit (i.e., NSPS, 40 CFR Part 60, Subparts A, I, Kb, GG, OOO, IIII, or JJJJ; or 40 CFR Part 63, Subpart ZZZZ for engines at area sources) or that is making modifications that require a case-by-case determination. After construction is complete, an NOI to Operate must be submitted within 180 days of start-up and a new Authorization to Operate will be issued. All other facility modifications may be constructed without a minor source construction permit, an Authorization to Construct, or a new Authorization to Operate. For certain modifications, the permittee must send a Notice of Modification to AQD within 10 days of the start of operation of the modification.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]

Subchapter 9 requires an owner or operator of a regulated facility to report all excess emissions from an air pollution source caused by malfunction, shutdown, start-up, or regularly scheduled maintenance that is in violation of the applicable air pollution control rule, permit, or order of the DEQ. No specific emission limitation, standard, or criteria is specified in this subchapter.

The permit assures compliance with this regulation using the following approach:

Conditions are included in the standard conditions of this permit that require prompt reporting to AQD should excess emissions occur.

OAC 252:100-13 (Open Burning) [Applicable]

This subchapter prohibits open burning of refuse and other combustible material except in compliance with OAC 252:100-13-7 and 9. No specific emission limitation or criterion is specified in this subchapter. However, work practice conditions and standards are specified.

The permit assures compliance with this regulation using the following approach:

Subchapter 13 applies to all facilities. Therefore, the permit includes a condition that requires compliance with this subchapter. However, open burning is not expected to take place at facilities covered under this permit. Therefore, no initial compliance demonstration or continuing monitoring, recordkeeping, or reporting requirements associated with this subchapter are included in the permit.

OAC 252:100-25 (Smoke, Visible Emissions and Particulates) [Applicable]

This subchapter states no person shall allow or permit the discharge of any fumes, aerosol, mist, gas, smoke, vapor, particulate matter, or any combination thereof, exhibiting greater than 20 percent equivalent opacity except for short-term occurrences. At no time may the opacity exceed 20 percent for one six-minute period in any consecutive 60 minutes nor more than three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

The permit assures compliance with this regulation using the following approach:

Subchapter 25 compliance demonstrations require an opacity reading by a Certified Visible Emission Evaluator using Method 9 (40 CFR Part 60, Appendix A). The DEQ will, however,

accept use of an alternative test method under limited circumstances. The permittee can demonstrate the presence or absence of visible emissions using Method 22 (40 CFR Part 60, Appendix A). The term "Fugitive emissions" as used in Method 22 shall be deemed to include all units subject to Subchapter 25 requirements. If visible emissions are present, Method 9 must be used to determine their level. Method 22 does not require a certified visible emissions observer, thus giving the facility some flexibility in meeting this requirement. Any source subject to an NSPS opacity limit is exempt from OAC 252:100-25-3 requirements.

OAC 252:100-29 (Control of Fugitive Dust)

[Applicable]

This subchapter prohibits any person from causing or allowing any fugitive dust source to be operated, or any substances to be handled, transported, or stored, or any structure constructed, altered, or demolished to the extent that such operation or activity may enable fugitive dust to become airborne and result in air pollution, without taking reasonable precautions to minimize or prevent pollution. Subchapter 29 further prohibits discharge of visible fugitive dust beyond the property line on which the emissions originated in such a manner as to damage or interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. A list of reasonable precautions is specified in this subchapter.

The permit assures compliance with this regulation using the following approach:

The permit requires that the facility respond to any fugitive dust complaint within 48 hours. The facility shall take any necessary action to resolve the complaint, or they may refer the complaint to DEQ for response and investigation.

OAC 252:100-31 (Control of Emission of Sulfur Compounds)

[Applicable]

Subchapter 31 limits the emissions of sulfur compounds from existing and new equipment. The new gas fuel-burning equipment limit for sulfur dioxide (SO₂) is 0.2 lbs/MMBTU heat input, maximum three-hour average (which is equivalent to approximately 0.2 weight percent sulfur in the fuel gas which is equivalent to 2,000 ppm sulfur). The new liquid fuel-burning equipment limit for sulfur dioxide (SO₂) is 0.8 lbs/MMBTU heat input, maximum three-hour average. Subchapter 31 also requires that no person shall cause emission of hydrogen sulfide from any existing (constructed prior to July 1, 1972) or new equipment which results in an ambient air concentration of hydrogen sulfide at any given point greater than 0.2 ppm at standard conditions, 24-hour average.

The permit assures compliance with this regulation using the following approach:

Eligibility for an Authorization to Construct under the permit is restricted to those facilities using "commercial grade" natural gas, liquid petroleum gas, diesel, or #2 through #6 fuel oil with a maximum of 0.05 wt% sulfur to assure compliance with the new equipment requirements of this subchapter. A complete justification that demonstrates compliance with this rule is included as Appendix B of this memorandum. The fuel combusted at these facilities do not contain significant amount of hydrogen sulfide.

OAC 252:100-43 (Specific Sampling and Testing Methods)

[Part 1 Applicable]

This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and

operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. 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.

The permit assures compliance with this regulation using the following approach:

A standard condition is included which states that all required tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality.

Permit specific conditions establish minimum monitoring requirements for control devices associated with emission units addressed in this permit. In addition, testing must be performed as specified in 40 CFR Parts 51, 60, 61, 63, and 75, as applicable, unless otherwise specified in an Authorization under this permit.

2. Federal Regulations

Certain state regulations require compliance with federally promulgated regulations. OAC 252:100-7-15(d) requires that construction permits include all applicable requirements, including NSPS and NESHAP.

Credible Evidence, 40 CFR Part 51

[Applicable]

This regulation clarifies that “any credible evidence,” including data gathered from means other than the use of a specified “reference test method,” can be used to prove an alleged emission limitation violation.

The permit assures compliance with this regulation using the following approach:

Conditions are included in the Standard Conditions section of the permit to address the credible evidence requirements.

New Source Performance Standards (NSPS), 40 CFR Part 60

[Applicable]

NSPS means a standard of emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which, taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements, the Administrator of EPA determines has been adequately demonstrated. NSPS apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication of the standard applicable to that facility. Certain notification, recordkeeping, emissions limitations, performance tests, and monitoring requirements are specified in these regulations.

The permit assures compliance with this regulation using the following approach:

Conditions are included to address the NSPS general notification, recordkeeping, emissions limitations, performance test, and monitoring requirements. Conditions specific to a particular NSPS are included for each emissions unit that may be determined to be an affected unit. Unless incorporated by reference into the Authorization, eligibility for this permit is restricted to facilities whose emissions units are not subject to any NSPS subpart other than Subpart A, General Provisions; Subpart K, Standards of Performance for Storage Vessels for Petroleum Liquids, for storage tanks that have a capacity greater than 40,000 gallons but not exceeding 65,000 gallons and commenced construction or modification after March 8, 1974, and prior to May 19, 1978, or for storage tanks that have a capacity over 65,000 gallons that commenced construction or modification after June 11, 1973 and prior to May 19, 1978; Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids, for storage tanks that have a capacity greater than 40,000 gallons and commenced construction after May 18, 1978 and prior to July 23, 1984; Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), for storage tanks that have a capacity greater than 19,812 gallons and commenced construction, reconstruction, or modification after July 23, 1984; Subpart GG, Standards of Performance for Stationary Gas Turbines; Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants; Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; and Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

NESHAP, 40 CFR Part 63

[Applicable]

NESHAP, as found in the Code of Federal Regulations at 40 CFR Part 63, contain standards that regulate specific categories of stationary sources that emit one or more hazardous air pollutants. These standards are mainly for major source of HAP facilities. Some standards have been expanded to include area sources, which are sources of HAP emissions that are not major sources. Subpart A, General Provisions. This subpart addresses the general provisions that apply to NESHAPs for various source categories and each affected facility must comply with specific testing, monitoring, reporting, and recordkeeping requirements. The standards require all owners or operators of major sources (and certain non-major sources) in certain source categories to install maximum achievable control technology (MACT) unless specifically exempted.

The permit assures compliance with this regulation using the following approach:

Conditions are included in the facility-wide section of the permit to address the NESHAP general notification, compliance, performance testing, monitoring systems, methods, procedures, and frequency, and other pertinent requirements for the regulated source(s) specified for each source category. Facilities are also required to notify and report to applicable State authorities regarding their operations and emissions. Conditions also address general notification, monitoring, recordkeeping and reporting, and control device requirements under this regulation. Conditions specific to a particular MACT standard are included in the separate sections for each emissions unit that may be determined to be an affected unit. Unless incorporated by reference into the Authorization, eligibility for this permit is restricted to facilities whose emissions units are not subject to any NESHAP subpart other than Subpart A, General Provisions, and Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE).

3. Non-applicable Oklahoma and Federal Regulations

The following table lists the Oklahoma Air Quality Rules that are not applicable to facilities covered under this permit on a facility-wide basis. Rules applicable to a specific emission unit are listed separately.

**Facility-wide Summary
 Non-applicable Oklahoma Air Quality Rules**

OAC 252:100-8	Permits for Major Sources	Ineligible
OAC 252:100-11	Alternative Emissions Reduction	Ineligible*
OAC 252:100-15	Mobile Sources	Not a covered source
OAC 252:100-17	Incinerators	Not a covered source
OAC 252:100-19-10 & 11	PM from Wood waste Burning	Not a covered source
OAC 252:100-21	PM from Wood waste Burning	Not a covered source
OAC 252:100-23	Cotton Gins	Not a covered source
OAC 252:100-24	Grain Elevators	Not a covered source
OAC 252:100-31-12	Existing Equipment Standard for Sulfur Oxides	Ineligible*
OAC 252:100-35	Carbon Monoxide	Not a covered source
OAC 252:100-37, Part 5	Control of Organic Solvents	Not a covered source
OAC 252:100-37, Part 7	Control of Specific Processes	Not a covered source
OAC 252:100-39, Part 7 Sections 40, 42, 43, 44- 47, & 49	Emissions of VOCs in Nonattainment Areas and Former Non Attainment Areas	Ineligible *
OAC 252:100-43, Part 3	Specific Testing Methods	Not a covered source

*Ineligible for Authorization to Construct. May be eligible if addressed in an individual permit and carried over into Authorization to Operate.

The following table lists the Federal Regulations that are not applicable to facilities covered under this permit on a facility-wide basis. Rules applicable to a specific emission unit are listed separately.

Non-applicable Federal Regulations

40 CFR Part 52	Prevention of Significant Deterioration	Not applicable
40 CFR Part 59	Consumer/Commercial Products	Not a covered source
40 CFR Part 64	Compliance Assurance Monitoring	Not a major source
40 CFR Part 68	Chemical Accident Prevention	Ineligible
40 CFR Part 82, Subpart B	Stratospheric Ozone for Servicing of MVACs	Ineligible *
40 CFR Part 82, Subpart C	Ban on Nonessential Products	Ineligible *
40 CFR Part 82, Subpart D	Stratospheric Ozone for Federal Procurement	Ineligible *
40 CFR Part 82, Subpart E	Stratospheric Ozone for Labeling of Ozone- Depleting Products	Ineligible *
40 CFR Part 82, Subpart G	Stratospheric Ozone for the Significant New Alternatives Policy Program	Ineligible *
40 CFR Part 82, Subpart H	Stratospheric Ozone for Halon Emissions Reduction	Ineligible *

*Ineligible for Authorization to Construct. May be eligible if addressed in an individual permit and carried over into Authorization to Operate.

B. UNIT-SPECIFIC REQUIREMENTS

1. NONMETALLIC MINERAL PROCESSING EQUIPMENT REQUIREMENTS

Oklahoma Air Pollution Control Rules

OAC 252:100-19 (Control of Emissions of Particulate Matter) [Applicable]

This subchapter requires the control of emissions of particulate matter from fuel-burning equipment and from industrial processes. Section 19-12 limits particulate emissions from new and existing directly fired fuel-burning units (and/or) emission points in an industrial process based on process weight rate, as specified in Appendix A of this memorandum.

The permit assures compliance with this regulation using the following approach:

A permit condition is included which requires the permittee to monitor and keep records of the equipment ID, hourly process weight rate, annual throughput, type of control device used if any, efficiency of the control device, and the hours of operations. In addition, hourly limitations are established in the authorization for those emission points that have the potential to exceed allowable rates.

Federal Regulations

New Source Performance Standards (NSPS), 40 CFR Part 60 [Applicable]

Subpart 000 (Nonmetallic Mineral Processing) applies to nonmetallic mineral processing operations with rated capacities of greater than 25 TPH for fixed/stationary facilities and 150 TPH for portable facilities. Underground mines and stand-alone screening operations at plants without crushers or grinding mills are not subject to this requirement. The following facilities at a nonmetallic minerals processing plant which commenced construction or modification after August 31, 1983, are affected by Subpart 000: each crusher, grinding mill, bucket elevator, screening operation, belt conveyor, bagging operation, storage bin, and enclosed truck or railcar loading operation. Excluded from the list of affected facilities are truck dumping and transfer points from belt conveyors to stockpiles.

The permit assures compliance with this regulation using the following approach:

Specific conditions are included that specifically list these requirements. Generally, when these affected sources begin to process unsaturated material, they will become subject to the 10% opacity limit for any crusher and 15% opacity limit for any other affected facility, and be required to perform Method 9 testing within 60 days of achieving the maximum production rate, but no later than 180 days after initial start-up.

2. STORAGE TANK REQUIREMENTS

Oklahoma Air Pollution Control Rules

OAC 252:100-37 (VOCs) [Applicable]

Part 3 requires storage tanks (except pressure tanks) built after 12/28/74, and with a capacity of 400 gallons or more storing a VOC with a vapor pressure of 1.5 psia or greater under actual conditions to be equipped with a submerged fill pipe or a vapor-recovery system.

Part 3 requires storage tanks (except pressure tanks) built after 12/28/74, with a capacity greater than 40,000 gallons to be equipped with a floating roof or a vapor-recovery system capable of collecting 85% or more of the uncontrolled VOCs.

The permit assures compliance with this regulation using the following approach:

Tanks constructed after July 1, 1972, storing a VOC with a vapor pressure greater than 1.5 psia, with a capacity greater than 400 gallons must be equipped with a submerged fill pipe. Compliance with this rule requires that the permittee maintain records of the types of volatile petroleum liquids stored, the true vapor pressure of the liquid as stored, and the dimension and capacity of the tank. An Authorization to Construct is not allowed for a facility using a vapor-recovery/vapor disposal system as required by OAC 252:100-37-15(a)(2), or other equipment of equal efficiency, as required by 252:100-37-15(a)(3). Such facilities must obtain a minor source construction permit for these vapor-recovery/vapor disposal systems and operational requirements developed in that construction permit must be incorporated into an Authorization to Operate. Thus, requirements do not need to be included in the general permit for vapor recovery/vapor disposal systems and their associated control devices. No conditions are included in the permit for storage tanks with a capacity greater than 40,000 gallons since they are ineligible for coverage under this permit.

OAC 252:100-39 (VOCs in Non-Attainment Areas)

[Applicable]

Part 5 sets control requirements for petroleum liquid storage vessels equipped with external floating roofs, having capacities greater than 40,000 gallons and located in Tulsa and Oklahoma counties. Part 7 requires that each VOC vessel with a capacity greater than 40,000-gal shall be a pressure vessel or shall be equipped with a floating roof or a vapor-recovery system that consists of a vapor-gathering system capable of collecting 90 percent by weight or more of the uncontrolled VOCs.

Part 7 requires that each VOC storage vessel with a nominal capacity greater than 400-gal and less than 40,000-gal shall be equipped with a submerged fill pipe or be bottom filled. The displaced vapors from each storage vessel with an average daily throughput of 30,000 gal or greater which stores VOCs shall be processed by a system that has a total collection efficiency no less than 90 percent by weight of total VOCs in the vapors.

Part 7 requires that each VOC storage vessel (located in Tulsa County only) with a nominal capacity greater than 2,000-gal and less than 40,000-gal, in addition to being equipped with a submerged fill pipe or being bottom loading, shall be equipped with a vapor control system.

The permit assures compliance with this regulation using the following approach:

Eligibility is restricted to those gasoline or other VOCs (with vapor pressure greater than 1.5 psia) tanks constructed in Tulsa County with a capacity less than 2,000 gallons. Thus, the only requirement that applies is the installation and operation of a permanent submerged fill pipe for any tank with capacity greater than 400 gallons. An Authorization to Construct is not allowed for a facility using a vapor-recovery/vapor disposal system as required by 100-39-41(a)(2), 100-39-41(b)(2), or 100-39-41(c)(5), or other equipment of equal efficiency, as required by 100-39-41(a)(3). Such facilities must obtain a minor source construction permit for these vapor-recovery/vapor disposal systems and operational requirements developed in that construction permit must be incorporated into an Authorization to Operate. Thus, requirements do not need to be included in the general permit for vapor recovery/vapor disposal systems and their associated control devices.

Federal Regulations

None are applicable.

3. INTERNAL COMBUSTION ENGINE REQUIREMENTS

Oklahoma Air Pollution Control Rules

OAC 252:100-19-4 (PM Emissions from Fuel-burning Equipment) [Applicable]
Subchapter 19 requires that the maximum allowable emissions of particulate matter (Y) from engines (maximum heat input measured in MMBTU/hr) not exceed the following amount:

Y = 0.6	Pounds Per MMBTU	For Heat Input < 10 MMBTU/hr
Log(Y) =	-0.239Log(X) + 0.0182	For 10 < Heat Input < 1,000 MMBTU/hr
Log(Y) =	-0.301Log(X) + 0.2041	For 1,000 < Heat Input < 10,000 MMBTU/hr
Y = 0.1	Pounds Per MMBTU	For Heat Input > 10,000 MMBTU/hr

Where Y = Pounds of PM per MMBTU
X = MMBTU/hr

This is based on OAC 252:100, Appendix C.

The permit assures compliance with this regulation using the following approach:

AP-42, Table 3.2-2 (10/96) lists natural gas PM₁₀ emissions to be about 0.046 lbs/MMBTU for 2-cycle engines and 0.007 lbs/MMBTU for 4-cycle engines, which is in compliance for all heat input ranges. For gasoline fuel, AP-42, Table 3.3-1 (10/96) lists PM₁₀ emissions to be about 0.10 lbs/MMBTU which is also in compliance for all heat input ranges. For diesel fuel, AP-42, Table 3.3-1 (10/96) lists PM₁₀ emissions to be about 0.31 lbs/MMBTU, which corresponds to an engine(s) of 160 MMBTU per hour. No fuel-burning equipment rated at 160 MMBTU per hr is expected to be present at these sites. No specific conditions are needed in the permit to address these requirements since all engines expected to be present at these sites should have emissions that never exceed the above limits. In addition, a condition has been placed in the eligibility section that reserves the right of DEQ to refuse issuance of an Authorization under this permit.

OAC 252:100-31 (Sulfur Compounds) [Applicable]

Part 2 requires that no person shall cause emission of hydrogen sulfide from any existing (constructed prior to July 1, 1972) or new equipment which results in an ambient air concentration of hydrogen sulfide at any given point greater than 0.2 ppm at standard conditions, 24-hour average. H₂S emissions are considered negligible and therefore in compliance with this part.

Part 5 limits SO₂ emissions from any new gas-fired fuel-burning equipment to 0.2 lb/MMBTu heat input for a three-hour average. Part 5 limits SO₂ emissions from any new liquid-fired fuel-burning equipment to 0.8 lb/MMBTu heat input for a three-hour average.

The permit assures compliance with this regulation using the following approach:

Eligibility for an Authorization to Construct under the permit is restricted to those facilities using liquid petroleum gas, natural gas with no greater than 20 grains/100 scf total sulfur content, diesel fuel with sulfur content less than 0.05% by weight, or No. 2 through No. 6 fuel oil with a

sulfur content less than 0.05% by weight. Appendix B of this memorandum documents compliance with Subchapter 31 for any engine eligible for the permit and combusting these restricted fuels. The fuel combusted at these facilities do not contain significant amount of hydrogen sulfide.

OAC 252:100-37 (Control of VOCs)

[Applicable]

This subpart, as applied to engines, provides that all fuel-burning equipment shall be operated so as to minimize emissions of hydrocarbons or other organic materials. The equipment should be operated such that it is not overloaded, that it is properly cleaned and maintained, and that temperature and available air are sufficient to provide essentially complete combustion.

The permit assures compliance with this regulation using the following approach:

Specific conditions are included in the permit that require that the permittee properly operate and maintain engines and associated control systems in a manner that will minimize emissions. Operational and maintenance records are required to be kept to document compliance with this requirement.

SECTION VII. TIER CLASSIFICATION AND PUBLIC REVIEW

Processing of a General Permit modification/renewal has been classified as Tier II based on OAC 252:4-7-33(c)(1). A request for an Authorization under this General Permit will typically be classified as Tier I, unless a compliance schedule required by OAC 252:100-8-5(e)(8)(A)(iii) is included, in which case it will be classified as Tier II.

After completion of the peer review of this draft permit, DEQ will publish the "Notice of Tier II Draft Permit" in the *Daily Oklahoman* and the *Tulsa World* in a future date. The notice will state that the draft permit will be available for public review at the AQD office in Oklahoma City and Tulsa, and on the Air Quality section of the DEQ web page at www.deq.state.ok.us. Comments will be received during a 30-day comment period. A summary of the comments, and DEQ responses, will be included in the final draft of this permit.

SECTION VIII. RESPONSE TO COMMENTS

The Oklahoma Department of Environmental Quality (DEQ) will publish a notice on a future date, stating that the draft Nonmetallic Mineral Processing Facility General Permit will be available for public review and comment. The public comment period will expire thirty days after the notice is published. A summary of the comments and staff's responses will be listed in this section.

SECTION IX. SUMMARY

Applicants must demonstrate eligibility for coverage under this General Permit and that they are able to comply with applicable air quality rules and regulations. Ambient air quality standards are not threatened at any of the sites eligible for coverage under this General Permit. Issuance of the permit is recommended.

SECTION X. REFERENCES

1. EPA Office of Compliance Sector Notebook Project: Profile of the Non-Fuel, Non-Metal Mining Industry. EPA 310-R-95-011. September 1995.
2. OGS/USGS Factsheet: Non-Fuel Raw Material Production in Oklahoma. 1996.
3. USEPA's Environfacts Warehouse Results of May 18, 1998. Databases accessed include NPDES, RCRA, CERCLA, TSCA and AIRS. Note: Facilities may have been counted more than once if listed under two or more databases. www.epa.gov/enviro/html/ef_query.html
4. AIRSWeb. SIC Emissions Report: Oklahoma PT Air Pollution Sources. EPA Office of Air Quality Planning and Standards. June 5, 1998. www.epa.gov:6703/airwdcd/owa/afs.sic
5. AP-42 (1/95) "Compilation of Air Pollution Emission Factors".

Appendix A
Documentation of Compliance with OAC 252:100-19

Subchapter 19 controls the emission of particulate matter (PM) from both fuel burning equipment and industrial processes. Allowable particulate matter (PM) emissions rates are established for both new and existing directly fired fuel-burning units and industrial processes. Such emissions, as pertains to the crusher/screen, shall not exceed the limits specified in OAC 252:100, Appendix G.

$$E_{STD} = 4.10P^{0.67} \quad \text{P up to 30 tons/hour}$$

$$E_{STD} = 55.0P^{0.11} - 40 \quad \text{P greater than 30 tons/hour}$$

where: E_{STD} = allowable total PM emission rate in lb/hour
 P = process weight rate of crusher/screen in tons/hour

The following table summarizes the numerical value of the allowable total PM emission rate in lb/hour corresponding to the process weight rate of crusher/screen in tons/hour.

Process Weight Rate	Allowable Emission Rate
P (Tons/hour)	E_{STD} lb/hr
5	12.05
10	19.18
20	30.51
30	40.04
60	46.29
80	49.06
100	51.28
200	58.51
300	63.00
400	66.31
500	68.96
600	71.16
700	73.06
800	74.74
900	76.23
1000	77.59

APPENDIX B
Justification to Document Compliance w/OAC 252:100-31
Fuel-burning equipment

PART 5. NEW EQUIPMENT STANDARDS

252:100-31-25 Fuel-burning equipment.

(a) Emission limit.

(1) **Gas-fired-fuel-burning equipment.** Sulfur oxide emissions (measured as sulfur dioxide) from any new gas-fired fuel-burning equipment shall not exceed 0.2 lbs/MMBTU heat input (86 ng/J).

(2) **Liquid-fired fuel-burning equipment.** Sulfur oxide emissions (measured as sulfur dioxide) from new liquid-fired fuel-burning equipment shall not exceed 0.8 lbs/MMBTU heat input (340 ng/J).

Justification: New Equipment Standard

The amount of SO₂ produced by burning natural gas is dependent upon the conversion of sulfur compounds in the gas, measured as TRS (Total Reduced Sulfur), to SO₂. If sulfur levels in natural gas used to fuel these facilities are not expected to exceed 20 grains/100 scf, then, the conversion of all sulfur compounds, on a basis of one mole TRS to one mole SO₂, the amount of SO₂ generated can be calculated as below:

$$\frac{20 \text{ grainS}}{100 \text{ scf}} \times \frac{1 \text{ pound}}{7000 \text{ grains}} \times \frac{1 \text{ mole}}{32 \text{ lbS}} \times \frac{64 \text{ lbSO}_2}{1 \text{ mole}} = 5.714 \times 10^{-5} \frac{\text{lbSO}_2}{\text{scf}}$$

$$5.714 \times 10^{-5} \frac{\text{lbSO}_2}{\text{scf}} \times \frac{1 \text{ scf}}{1050 \text{ BTU}} \times \frac{10^6 \text{ BTU}}{\text{MMBTU}} = 0.05 \frac{\text{lbSO}_2}{\text{MMBTU}}$$

The result of 0.05 lbs of SO₂/MMBTU heat input is less than 0.2 lbs/MMBTU in 252:100-31-25(a)(1) heat input limit. Thus, setting up an eligibility restriction at 20 grains/100 scf assures compliance with the new equipment standard of 0.2 lbs/MMBTU heat input.

Likewise, the amount of SO₂ produced by burning liquid fuels can be calculated in a similar manner. The following table shows the characteristics of the various fuels expected to be used at an asphalt plant. Note that liquid petroleum gas (LPG), typically made by fractionating natural gas into its various components, has negligible sulfur content. No SO₂ emissions are expected from using LPG as a fuel.

Fuel Characteristics⁵

Fuel Type	Density (lb/gallon)	Heating Value (BTU/gallon)	Wt. % Sulfur
Residual Oil	7.88	150,000	0.5-4.0
Distillate Oil	7.05	140,000	0.2-1.0
Diesel Fuel	7.0	137,000	0.4
Liquid Petroleum Gas	NA	94,000	negligible

The maximum allowable sulfur content of the fuel oil at 0.8 lbs/MMBTU heat input in 252:100-31-25(a)(2) limit can be calculated using a worst case of a liquid fuel with 135,000 BTU/gallon and density of 7.0 lb/gallon, as follows.

$$\frac{0.8 \text{ lbSO}_2}{\text{MMBTU}} \times \frac{135,000 \text{ BTU}}{\text{gallon}} \times \frac{1 \text{ gallon}}{7 \text{ pounds}} \times \frac{\text{MMBTU}}{10^6 \text{ BTU}} \times \frac{1 \text{ mole}}{64 \text{ lbSO}_2} \times \frac{32 \text{ lbS}}{1 \text{ mole}} = 0.0077 \frac{\text{lbS}}{\text{lbfuel}}$$

$$0.0077 \frac{\text{lbS}}{\text{lbfuel}} \times 100 = 0.8 \text{ wt\%}$$

Thus, setting up an eligibility restriction of liquid fuels consisting of only residual or distillate oil or diesel fuel with a maximum of 0.8 wt% S assures compliance with the new equipment standard of 0.8 lbs/MMBTU heat input. Currently, low sulfur diesel contains sulfur less than 0.05 wt%, which is less than 0.8 wt% and automatically assures compliance with the new equipment standard of 0.8 lbs/MMBTU heat input. A permittee not meeting this eligibility requirement may be eligible for coverage under an Authorization to Operate if they obtain an individual construction permit and all relevant requirements and limitations in that permit are incorporated into the Authorization to Operate.