



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **092013-003**

Project Number: 2013-05-047
Installation ID: 213-0057

Parent Company: Quality Structures of Arkansas, LLC

Parent Company Address: P.O. Box 1440, Hollister, MO 65673

Installation Name: Quality Structures of Arkansas, LLC

Installation Address: Historic Highway 165, Hollister, MO 65673

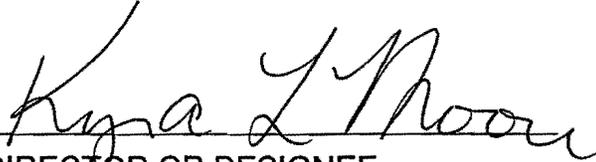
Location Information: Taney County, S24 T22N R22W

Application for Authority to Construct was made for:
A construction permit for an existing rock crushing plant. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

SEP 03 2013

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SITE SPECIFIC SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

1. **Best Management Practices Requirement**
Quality Structures of Arkansas, LLC shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
2. **Ambient Air Impact Limitation**
 - A. Quality Structures of Arkansas, LLC shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Quality Structures of Arkansas, LLC shall demonstrate compliance with Special Condition 2.A using Attachment A and Attachment B or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Quality Structures of Arkansas, LLC shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
 - C. Quality Structures of Arkansas, LLC is exempt from the requirements of Special Condition 2.B when no other plants are operating at this site.
3. **Annual Emission Limit**
 - A. Quality Structures of Arkansas, LLC shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation.
 - B. Quality Structures of Arkansas, LLC shall demonstrate compliance with Special Condition 3.A using Attachment B or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
4. **Moisture Content Testing Requirement**
 - A. Quality Structures of Arkansas, LLC shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
 - C. The initial test shall be conducted no later than 45 days after the start of operation. A second test shall be performed the calendar year following the initial test during the months of July or August.

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SITE SPECIFIC SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).
 - E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Quality Structures of Arkansas, LLC main office within 30 days of completion of the required test.
 - F. If the moisture content of either of the two tests is less than the moisture content in Special Condition 5.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Quality Structures of Arkansas, LLC shall either:
 - 1) Apply for a new permit to account for the revised information, or
 - 2) Submit a plan for the installation of wet spray devices to the Compliance/Enforcement Section of the Air Pollution Control Program within ten days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
 - G. In lieu of testing, Quality Structures of Arkansas, LLC may obtain test results that demonstrate compliance with the moisture content in Special Condition 5.A from the supplier of the aggregate.
5. Minimum Distance to Property Boundary Requirement
The primary emission point shall be located at least 600 feet from the nearest property boundary.
6. Primary Equipment Requirement
Quality Structures of Arkansas, LLC shall process all rock through the primary crusher (EP03). Bypassing the primary crusher is prohibited.
7. Record Keeping Requirement
Quality Structures of Arkansas, LLC shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources personnel upon request.
8. Reporting Requirement
Quality Structures of Arkansas, LLC shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2013-05-047
Installation ID Number: 213-0057
Permit Number:

Quality Structures of Arkansas, LLC
Historic Highway 165
Hollister, MO 65673

Complete: May 31, 2013

Parent Company:
Quality Structures of Arkansas, LLC
P.O. Box 1440
Hollister, MO 65673

Taney County, S24 T22N R22W

PROJECT DESCRIPTION

Quality Structures of Arkansas, LLC (Quality Structures) operates an existing stationary rock crushing plant that is located in Taney County near Hollister, Missouri. Quality Structures has been operating at this site and never obtained a construction permit. They received a notice of violation (NOV# 146865W) April, 2013, for illegal open burning. During the inspection, the inspector noticed that the facility had added equipment and required Quality Structures to obtain a formal permit determination for their facility. After further review it was determined that Quality Structures would need to obtain a construction permit for their facility. Quality Structure's plant consists of one primary crusher (EP03) with an MHDR of 200 tons of rock crushed per hour, two screens (EP05 and EP07) and its associated conveyors and two transfer belts (EP09 and EP10). The two screens are both rated at 275 tons of rock screened per hour however these screens are bottlenecked to 200 tons per hour due to the MHDR of the primary crusher. The primary crusher is a track mounted unit and is powered by a 300 HP diesel engine. In addition to powering the primary crusher the engine can be used to propel the equipment; therefore, the engine is considered a non-road engine. Non-road engines are not authorized by 10 CSR 6.060 therefore the emissions from this engine were not included in this project. Two 65 HP diesel engines (EP14 and EP15) power the two screens at this site. Two 25 HP diesel engines (EP16 and EP17) power the two transfer belts at this site. The emissions from the screen and transfer belt engines were included in this project. The equipment covered by this permit is subject to 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" and is required to show compliance with any requirements found within Subpart OOO. Quality Structures will also need to submit an application for a basic operating permit to the Air Pollution Control Program with 30 days after commencement of operation.

Quality Structure also mentioned within their application that they have a top soil screen at this location however it is not in use. This permit did not consider the top soil screen in this permit and if Quality Structure wishes to operate the top soil screen at this site they must first submit a formal permit applicability determination request to determine if a construction permit is required for this piece of equipment.

The applicant is using one of the methods described in Attachment AA, “Best Management Practices,” to control emissions from haul roads and vehicular activity areas.

This installation is located in Taney County, attainment status.

This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

No permits have been issued to Quality Structures of Arkansas, LLC from the Air Pollution Control Program.

TABLES

The table below summarizes the emissions of this project. There are no existing potential emissions or existing actual emissions from this facility as Quality Structures has never received a construction permit. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The conditioned potential emissions are based on a voluntary limit to avoid dispersion modeling requirements found in 10 CSR 10-6.060 Section (6). The conditioned potential emissions include emissions from sources that will limit their production to ensure compliance with the annual emission limit.

Table 1: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Existing Potential Emissions	Existing Actual Emissions	^a Potential Emissions of the Application	^b Conditioned Potential Emissions
PM	25.0	N/A	N/A	55.98	43.56
PM ₁₀	15.0	N/A	N/A	19.27	<15.00
PM _{2.5}	10.0	N/A	N/A	9.60	7.47
SO _x	40.0	N/A	N/A	0.94	0.73
NO _x	40.0	N/A	N/A	24.44	19.02
VOC	40.0	N/A	N/A	1.95	1.52
CO	100.0	N/A	N/A	5.27	4.10
GHG (CO ₂ e)	100,000	N/A	N/A	N/D (<100,000)	N/D (<100,000)
GHG (mass)	250.0	N/A	N/A	N/D	N/D
Total HAPs	25.0	N/A	N/A	0.02	0.02

N/A = Not Applicable; N/D = Not Determined

^aIncludes site specific haul road and storage pile emissions

^bConditioned Potential Emissions are based on a voluntary 15.0 ton per year PM₁₀ limit to avoid dispersion modeling requirements found in 10 CSR 10-6.060 Section (6). All other pollutants are proportionally reduced.

Table 2: Ambient Air Quality Impact Analysis

Pollutant	NAAQS/RAL ($\mu\text{g}/\text{m}^3$)	Averaging Time	^a Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$)	Limited Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	^b Daily Limit (tons/day)
^c PM ₁₀ (same)	150.0	24-hour	46.23	N/A	20.0	N/A
^d PM ₁₀ (separate)	150.0	24-hour	N/A	46.2	103.77	N/A

^aModeled impact at maximum capacity with controls

^bIndirect limit based on compliance with NAAQS.

^cSolitary operation or operation with other plants that are owned by Quality Structures of Arkansas, LLC

^dOperation with other plants that are not owned by Quality Structures of Arkansas, LLC

EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States EPA document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the rock-crushing equipment were calculated using emission factors from AP-42 Section 11.19.2 “Crushed Stone Processing and Pulverized Mineral Processing,” August 2004. The controlled emission factors were used because the inherent moisture content of the crushed rock is greater than 1.5 % by weight.

Emissions from the four diesel engines that power the screens and transfer belts were calculated using emission factors from AP-42 Section 3.3 Gasoline and Diesel Industrial Engines,” October 1996. The potential emissions from the engine powering the primary crusher were not included in this project as the primary crusher is a track mounted unit where the engine can be used to propel the piece of equipment as well as crush the rock therefore it is considered a non-road engine.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 “Unpaved Roads,” November 2006. A 90% control efficiency for PM and PM₁₀ and a 40% control efficiency for PM_{2.5} were applied to the emission calculations for the use of BMPs. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4. The moisture content of the aggregate is 1.5 % by weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Western Regional Air Partnership Fugitive Dust Handbook, Chapter 9 (September 7, 2006).

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 2. The Air Pollution Control Program requires an AAQIA of PM₁₀ for all asphalt, concrete and rock-crushing plants regardless of the level of PM₁₀ emissions if a permit is required. An AAQIA is required for other pollutants if their

emissions exceed their respective de minimis or screening model action level (SMAL). The AAQIA was performed using the Air Pollution Control Program's generic nomographs and when appropriate the EPA modeling software AERSCREEN. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the NAAQS or RAL for the pollutant. If during continuous operation the modeled concentration of a pollutant is greater than the applicable NAAQS or RAL, the plant's production is limited to ensure compliance with the standard.

This plant uses BMPs to control emissions from haul roads and vehicular activity areas, so emissions from these sources were not included in the AAQIA. Instead they were addressed as a background concentration of $20 \mu\text{g}/\text{m}^3$ of PM_{10} in accordance with the Air Pollution Control Program's BMPs interim policy.

OPERATING SCENARIOS

The plant is permitted to operate with other plants located at the site as long as the NAAQS is not exceeded. The following scenarios explain how Quality Structures of Arkansas, LLC shall demonstrate compliance with the NAAQS.

- When no other plants are located at this site Quality Structures of Arkansas, LLC is not required to calculate the daily impact of equipment covered in this permit.
- When plants that are owned by Quality Structures of Arkansas, LLC, which are referred to as same owner plants, are located at the site, Quality Structures of Arkansas, LLC must calculate the daily impact of each plant and limit the total impact of all plants to not exceed the NAAQS using Attachment A.
- When plants that are not owned by Quality Structures of Arkansas, LLC, which are referred to as separate owner plants, are located at the site, Quality Structures of Arkansas, LLC must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Quality Structures of Arkansas, LLC that are operating at the site. This total is limited to not exceed the NAAQS. Quality Structures of Arkansas, LLC will limit the total impact of all plants they own and operate at the site to $46.23 \mu\text{g}/\text{m}^3$ when any plants they do not own are located at the site. Quality Structures of Arkansas, LLC is not permitted to operate with any plant that is not owned by Quality Structures of Arkansas, LLC that has a separate owner background greater than $83.77 \mu\text{g}/\text{m}^3$. During this scenario, Quality Structures of Arkansas, LLC shall use Attachment B to demonstrate compliance with the NAAQS.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Potential emissions of PM remain at minor source levels. All other pollutants are proportionately reduced and remain below the de minimis levels.

APPLICABLE REQUIREMENTS

Quality Structures of Arkansas, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- A Basic Operating Permit application is required for this installation within 30 days of commencement of operations.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment."
- 40 CFR 63 Subpart ZZZZ, "National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" applies to the engines powering the screens and transfer belts.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) apply to the proposed equipment.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Gerad Fox
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 28, 2013, received May 31, 2013, designating Quality Structures of Arkansas, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment AA: Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the portable plant is operating.

1. Pavement
 - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions¹ while the plant is operating.
 - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.

2. Application of Chemical Dust Suppressants
 - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
 - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources personnel upon request.

3. Application of Water-Documented Daily
 - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
 - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - C. Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
 - D. The operator shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
 - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources personnel upon request.

APPENDIX A

Abbreviations and Acronyms

%	percent	MMBtu	Million British thermal units
°F	degrees Fahrenheit	MMCF	million cubic feet
acfm	actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	NAAQS ...	National Ambient Air Quality Standards
BMPs	Best Management Practices	NESHAPs ..	National Emissions Standards for Hazardous Air Pollutants
Btu	British thermal unit	NO_x	nitrogen oxides
CAM	Compliance Assurance Monitoring	NSPS	New Source Performance Standards
CAS	Chemical Abstracts Service	NSR	New Source Review
CEMS	Continuous Emission Monitor System	PM	particulate matter
CFR	Code of Federal Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CO	carbon monoxide	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
CO₂	carbon dioxide	ppm	parts per million
CO_{2e}	carbon dioxide equivalent	PSD	Prevention of Significant Deterioration
COMS	Continuous Opacity Monitoring System	PTE	potential to emit
CSR	Code of State Regulations	RACT	Reasonable Available Control Technology
dscf	dry standard cubic feet	RAL	Risk Assessment Level
EQ	Emission Inventory Questionnaire	SCC	Source Classification Code
EP	Emission Point	scfm	standard cubic feet per minute
EPA	Environmental Protection Agency	SIC	Standard Industrial Classification
EU	Emission Unit	SIP	State Implementation Plan
fps	feet per second	SMAL	Screening Model Action Levels
ft	feet	SO_x	sulfur oxides
GACT	Generally Available Control Technology	SO₂	sulfur dioxide
GHG	Greenhouse Gas	tph	tons per hour
gpm	gallons per minute	tpy	tons per year
gr	grains	VMT	vehicle miles traveled
GWP	Global Warming Potential	VOC	Volatile Organic Compound
HAP	Hazardous Air Pollutant		
hr	hour		
hp	horsepower		
lb	pound		
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		
m/s	meters per second		
Mgal	1,000 gallons		
MW	megawatt		
MHDR	maximum hourly design rate		

Mr. Gary Shaver
Owner
Quality Structures of Arkansas, LLC
P.O. Box 1440
Hollister, MO 65673

RE: New Source Review Permit - Project Number: 2013-05-047

Dear Mr. Shaver:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Gerad Fox, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:gfk

Enclosures

c: Southwest Regional Office
PAMS File: 2013-05-047

Permit Number: