

STATE OF MISSOURI



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: **1 2 2 0 1 0 - 0 1 5**

Project Number: 2009-08-017

Parent Company: C & C Rock Quarry

Parent Company Address: 1200 E. State Rt. Z, Cleveland, MO 64734

Installation Name: C & C Rock Quarry

Installation ID: 037-0059

Installation Address: MO Hwy. 2 and West Line Rd., West Line, MO 64791

Location Information: Cass County, S8, T44, R33

Application for Authority to Construct was made for:
Construction of a 450 ton-per-hour impact crusher and a 250 ton-per-hour hammer mill.
This review was conducted in accordance with Section (5), 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.

DEC 30 2010

EFFECTIVE DATE

Handwritten signature of Kyrá Z Moore in cursive script.

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 Departments' 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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GENERAL 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. Generic Plant Designation and Maximum Combined Hourly Design Rate
C & C Rock Quarry has been designated to be a Generic Plant Operation. The combined Maximum Hourly Design Rate (MHDR) each of the following generic equipment types shall not exceed the rates and numbers listed below.

Equipment Type	Maximum Combined Hourly Design Rate	Maximum Number of Units
Primary Unit(s) (Primary Crusher)	450 tons per hour	1
Feeder/Grizzly	450 tons per hour	1
Crusher(s) including primary crusher	700 tons per hour	2
Conveyor(s), Stacker(s)	2500 tons per hour	10
Screen(s)	450 tons per hour	1
Diesel Engines	700 horse power	2

2. Generic Plant Equipment Identification Requirement
 - A. C & C Rock Quarry shall submit the following information to the Air Pollution Control Program's Permitting Section and the Kansas City Regional Office within 15 days of actual startup.
 - 1) A master list of all equipment that will be permitted for use with the generic plant. This master list shall include at minimum the following information for each piece of equipment:
 - a.) Manufacturer's name
 - b.) Model number
 - c.) Serial number
 - d.) Actual MHDR
 - e.) Date of manufacture
 - f.) Any other additional information that is necessary to uniquely identify the equipment.
 - 2) A list of the core equipment that will always be utilized with the generic plant. The core equipment associated with the generic plant shall include at least one primary unit that controls the rate of the process flow (e.g., a primary crusher or primary screen).
 - 3) A determination of the applicability of 40 CFR Part 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" for each piece of equipment indicating whether each piece of equipment is subject to Subpart OOO and justification for this determination.

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GENERAL SPECIAL CONDITIONS:

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

- 4) C & C Rock Quarry Shall notify the Air Pollution Control Program's Permitting Section and the Kansas City Regional Office when new equipment is added to the master list and when core equipment is changed within 30 days of the change.
 - B. C & C Rock Quarry shall maintain a list of the specific equipment currently being utilized with the generic plant. Any arrangement of the generic plant's equipment must be such that the core equipment is not bypassed in the process flow.
3. Equipment Identification Requirement
C & C Rock Quarry shall maintain easily read permanent markings on each component of the plant. These markings shall be the equipment's serial number or a company assigned identification number that uniquely identifies the individual component.
4. Record Keeping Requirement
C & C Rock Quarry shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
5. Reporting Requirement
C & C Rock Quarry 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.

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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. Superseding Condition
 - A. The conditions of this permit supersede all special conditions found in the previously issued construction permit 092001-016 from the Air Pollution Control Program.

2. Best Management Practices Requirement

C & C Rock Quarry shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing Best Management Practices as defined in Attachment AA.

3. Ambient Air Impact Limitation
 - A. C & C Rock Quarry shall not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for particulate matter less than ten microns in aerodynamic diameter (PM₁₀) of 150.0 µg/m³ 24-hour average in ambient air.

 - B. C & C Rock Quarry shall demonstrate compliance with special condition 3.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form. C & C Rock Quarry shall account for the impacts from other sources of PM₁₀ as instructed in Attachment A.

4. Minimum Distance to Property Boundary Requirement

The primary emission point shall be located at least 500 feet from the nearest property boundary.

5. Concurrent Operation Restriction

C & C Rock Quarry is prohibited from operating whenever other plants are located at the site.

6. Record Keeping Requirement

C & C Rock Quarry shall maintain all records required by this permit for five years and make them available to any Missouri Department of Natural Resources personnel upon request.

7. Reporting Requirement

C & C Rock Quarry 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 (5) REVIEW

Project Number: 2009-08-017
Installation ID Number: 037-0059
Permit Number:

C & C Rock Quarry
MO Hwy. 2 and West Line Rd.
West Line, MO 64791

Complete: November 19, 2009

Parent Company:
C & C Rock Quarry
1200 E. State Rt. Z
Cleveland, MO 64734

Cass County, S8, T44, R33

PROJECT DESCRIPTION

C&C Rock Quarry, formerly American U.S. Aggregates Quarry, is an existing minor source. The installation is permitted to operate a 250 ton per hour crusher, 12 conveyors and 250 ton per hour a screening plant that includes another eight conveyors. The plant is powered by two 350 horsepower diesel engines.

According to the applicant C & C Rock Quarry is replacing their existing crusher with a 4032 Iowa Cedar Rapids crusher. This replacement is a like-kind replacement and is therefore excluded from permitting. C & C Rock Quarry is installing a 450 ton per hour jaw crusher and a 250 ton per hour hammer mill.

After reviewing the initial draft permit, the installation requested the plant be re-classified as a generic plant. This will enable the installation to reconfigure the plant without becoming subject to 10 CSR 10-6.060.

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 Cass County, a maintenance area for ozone and an attainment area for all other criteria pollutants.

This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

TABLES

The following permits have been issued to C & C Rock Quarry from the Air Pollution Control Program.

Table 1:Permit History

Permit Number	Description
092001-016	Stationary Rock Crushing Plant

The table below summarizes the emissions of this project. The potential emissions of process equipment excluding emissions from haul roads and wind erosion, which are site specific should not vary from site to site. The existing actual emissions were taken from the 2002 EIQ. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year).

Table 2:Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/ SMAL	¹ Existing Potential Emissions	Existing Actual Emissions (2002 EIQ)	² Potential Emissions of the Application	New Installation Conditioned Potential Emissions
PM ₁₀	15.0	18.74	0.67	8.27	52.67
SO _x	40.0	N/A	N/A	5.65	1.75
NO _x	40.0	N/A	N/A	85.98	26.55
VOC	40.0	N/A	N/A	7.02	2.17
CO	100.0	N/A	N/A	18.52	5.72
Total HAPs	25.0	N/A	N/A	0.08	0.02

N/A = Not Applicable

¹Existing Potential Emissions taken from permit 092001-016

²Includes site specific haul road and storage pile emissions

³Screening Model Action Level (SMAL)

Table 3: Ambient Air Quality Impact Analysis Summary

Pollutant	¹ NAAQS (µg/m ³)	Averaging Time	² Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	³ Daily Limit (tons/day)
PM ₁₀	150.0	24-hour	259.01	130.0	20.0	3,333
NO _x	100	Annual	72.4	36.3	N/A	N/A

¹National Ambient Air Quality Standards (NAAQS) and Risk Assessment Level (RAL)

²Modeled impact at maximum capacity with controls

³Indirect limit based on compliance with NAAQS.

The plant's diesel engines were modeled using the SCREEN3 screen modeling software. The stack characteristic entered into the model is listed in Table 3.

Table 4:SCREEN3 Input Parameters

Equipment Description	Stack Height (m)	Stack Inside Diameter (m)	Stack Gas Exit Velocity (m/s)	Stack Gas Exit Temperature (K)	Dispersion Coefficient
Diesel Engine	3.6576	0.2539	15.8465	783.16	Rural
Diesel Engine	3.6576	0.2539	15.8465	783.16	Rural

EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States Environmental Protection Agency (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 equipment is control by water spray devices.

Emissions from the diesel engines were calculated using emission factors from AP-42 Section 3.3 Gasoline and Diesel Industrial Engines," October 1996.

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 is 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 0.7% weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of PM₁₀. 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 was required for NO_x because these emissions exceed the de minimis level for NO_x. The AAQIA was performed using the Air Pollution Control Program's generic nomographs and the EPA modeling software SCREEN3. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the National Ambient Air Quality Standard (NAAQS) for the pollutant. The distance from the plant to the nearest site boundary is 500 feet. When the plant operates continuously, the modeled concentration of PM₁₀ is greater than the NAAQS, so the plant's production was limited to ensure compliance with the NAAQS.

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 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ and NO_x are below de minimis levels.

APPLICABLE REQUIREMENTS

C & C Rock Quarry 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. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- *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 10-3.090

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.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) 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 (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Michael Mittermeyer
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 17, 2009, received November 19, 2009, designating C & C Rock Quarry as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated October 7, 2009.

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

¹For purposes of this document, Control of Fugitive Emissions means to control particulate matter that is not collected by a capture system and visible emissions to the extent necessary to prevent violations of the air pollution law or regulation. (Note: control of visible emission is not the only factor to consider in protection of ambient air quality.)

Attachment BB: Emission Calculations
C & C Rock Quarry
2009-08-017

Unit ID	Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	Control Eff. %	Emissions (lb/hr)	³ Modeling Rate (lb/hr)
EU1	Rock Face Loading	0.0300	VMT/hr	1.695670	VMT	90.00	0.0051	0.0016
EU2	Primary Crusher	450.0000	tons/hr	0.002400	Tons	0	1.0800	0.3335
EU3	Grizzly Screens	450.0000	tons/hr	0.000016	Tons	0	0.0072	0.0022
EU4	Screens	450.0000	tons/hr	0.008700	Tons	0	3.9150	1.2090
EU5	Diesel Engine-generator	0.0162	tons/hr	42.470000	Mgal	0	0.6899	0.2131
EU6	Diesel Engine-crusher	0.0162	tons/hr	42.470000	Mgal	0	0.6899	0.2131
EU7	Cedar Rapids hammer	250.0000	tons/hr	0.002400	Tons	0	0.6000	0.1853
EU8	Conveyer Belt	2500.0000	tons/hr	0.001100	Tons	0	2.7500	0.8492
EU9	Haul Road	11.3636	VMT/hr	2.005262	VMT	0	22.7871	7.0368
EU10	Storage Pile-Load In	450.0000	tons/hr	0.011991	Tons	0	5.3960	1.6663
EU11	Storage Pile-Wind	0.1000	acres	0.089166	Acres	0	0.0089	0.0028
EU12	Storage Pile-VA	450.0000	tons/hr	0.010036	Tons	90.00	0.4516	0.1395
EU13	Storage Pile-Load Out	450.0000	tons/hr	0.011991	Tons	90.00	0.5396	0.1666

¹Maximum Hourly Design Rate (MHDR)

²Emission Factor (EF)

³The Modeling Rate is the emission rate scaled to the daily hours of operation at MHDR allow by the permit.

Mr. Rex Carlson
Owner
C & C Rock Quarry
1200 E. State Rt. Z
Cleveland, MO 64734

RE: New Source Review Permit - Project Number: 2009-08-017

Dear Mr. Carlson:

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 amended 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 Michael Mittermeyer, at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:mml

Enclosures

c: Kansas City Regional Office
PAMS File: 2009-08-017

Permit Number: