

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: **082013-014**

Project Number: 2013-04-040
Installation ID: PORT-0616

Parent Company: The Monarch Cement Company

Parent Company Address: PO Box 1000, Humboldt, KS 66748

Installation Name: Joplin Concrete Company, Inc. - PORT-0616

Installation Address: 7791 East Newman Road, Joplin, MO 64801

Location Information: Jasper County, S34, T28N, R32W

Application for Authority to Construct was made for:
a portable truck mix concrete 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.

AUG 26 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.

Page No.	3
Permit No.	
Project No.	2013-04-040

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. **Equipment Identification Requirement**
Joplin Concrete Company, Inc. - PORT-0616 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. These identification numbers must be submitted to the Air Pollution Control Program no later than 15 days after start-up of the portable concrete plant.
2. **Relocation of Portable Concrete Plant**
 - A. Joplin Concrete Company, Inc. - PORT-0616 shall not be operated at any location longer than 24 consecutive months except if the Site Specific Special Conditions of this portable plant, PORT-0616, contain a nonroad engine requirement limiting the portable plant at the site specific location to 12 consecutive months.
 - B. A complete "Portable Source Relocation Request" application must be submitted to the Air Pollution Control Program prior to any relocation of this portable concrete plant.
 - 1) If the portable concrete plant is moving to a site previously permitted, and if the circumstances at the site have not changed, then the application must be received by the Air Pollution Control Program at least seven days prior to the relocation.
 - 2) If the portable concrete plant is moving to a new site, or if circumstances at the site have changed (e.g. the site was only permitted for solitary operation and now another plant is located at the site), then the application must be received by the Air Pollution Control Program at least 21 days prior to the relocation. The application must include written notification of any concurrently operating plants.
3. **Record Keeping Requirement**
Joplin Concrete Company, Inc. - PORT-0616 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.
4. **Reporting Requirement**
Joplin Concrete Company, Inc. - PORT-0616 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.

Page No.	4
Permit No.	
Project No.	2013-04-040

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."

PORT ID Number: PORT-0616

Site ID Number: 097-0142

Site Name: Joplin Concrete Company, Inc.

Site Address: 7791 East Newman Road Joplin, MO 64801

Site County: Jasper, S34, T28N, R32W

1. Best Management Practices Requirement
Joplin Concrete Company, Inc. - PORT-0616 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.
2. Ambient Air Impact Limitation
 - A. Joplin Concrete Company, Inc. - PORT-0616 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. Joplin Concrete Company, Inc. - PORT-0616 shall demonstrate compliance with Special Condition 2.A using Attachment A or other equivalent form that has been approved by the Air Pollution Control Program, including an electronic form. Joplin Concrete Company, Inc. - PORT-0616 shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
3. Moisture Content Testing Requirement
 - A. Joplin Concrete Company, Inc. - PORT-0616 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.
 - 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).

Page No.	5
Permit No.	
Project No.	2013-04-040

SITE SPECIFIC SPECIAL CONDITIONS:

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

- 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 Joplin Concrete Company, Inc. 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 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Joplin Concrete Company, Inc. - PORT-0616 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 10 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, Joplin Concrete Company, Inc. - PORT-0616 may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.
4. Control Device Requirement-Baghouse
- A. Joplin Concrete Company, Inc. - PORT-0616 shall control emissions from the equipment listed below using baghouses as specified in the permit application.
 - 1) Cement Silo, EP-03
 - 2) Truck Mix Loadout, EP-06 (shroud vented to baghouse)
 - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources employees may easily observe them.
 - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Joplin Concrete Company, Inc. - PORT-0616 shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

Page No.	6
Permit No.	
Project No.	2013-04-040

SITE SPECIFIC SPECIAL CONDITIONS:

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

- E. Joplin Concrete Company, Inc. - PORT-0616 shall maintain a copy of the baghouse manufacturer's performance warranty on site.
- F. Joplin Concrete Company, Inc. - PORT-0616 shall maintain an operating and maintenance log for the baghouses which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- 5. **Minimum Distance to Property Boundary Requirement**
The primary emission point shall be located at least 250 feet from the nearest property boundary.
- 6. **Concurrent Operation Restriction**
Joplin Concrete Company, Inc. - PORT-0616 is prohibited from operating whenever other portable plants not owned by The Monarch Cement Company are located at the site.
- 7. **Non-road Engine Requirement**
Joplin Concrete Company, Inc. - PORT-0616 cannot operate at this site longer than 12 consecutive months in order to avoid recordkeeping showing the movement of the 225 horsepower engine. To meet the definition of a nonroad engine as stated in 40 CFR 89.2, the 225 horsepower engine cannot remain in one physical location for longer than 12 months.

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

Project Number: 2013-04-040

Installation ID Number: PORT-0616

Permit Number:

Joplin Concrete Company, Inc. - PORT-0616
7791 East Newman Road
Joplin, MO 64801

Complete: April 17, 2013

Parent Company:
The Monarch Cement Company
PO Box 1000
Humboldt, KS 66748

Jasper County, S34, T28N, R32W

PROJECT DESCRIPTION

Joplin Concrete Company, Inc. is installing a portable concrete plant (PORT-0616) at the site in Joplin, Missouri where they currently operate a stationary plant with Permit # 122003-013. This portable plant will be at the site long enough to test it and to train someone on it before moving it to another site. While at the site, it may be used while the company does maintenance on the existing plant. It is not the company's intent to keep the portable plant at the site. However, since the permit on the existing plant prohibits colocation of another plant at the site, that permit is being amended. The existing plant does not have an operating permit, and neither the existing stationary plant nor the proposed portable plant is required to obtain one.

The portable truck mix concrete plant has a maximum hourly design rate of 280 tons/hour. Cement silo emissions are controlled by a baghouse, and truck loadout is controlled by a shroud vented to a baghouse. The plant does not use supplemental cementitious, so it does not have a supplemental silo or a control baghouse for one. Weigh hopper emissions are uncontrolled.

The portable truck mix concrete plant is powered by a self-contained 225 horsepower, year 2003 diesel engine; however, it meets the definition of nonroad engine as defined in 40 CFR 89.2. Therefore the emissions of the engine were not included. Although a portable plant is allowed to operate at a site for 24 consecutive months, this portable concrete plant is only allowed to operate at this site for 12 consecutive months since the diesel engine is classified as a nonroad engine.

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 Jasper County, an attainment area for all criteria pollutants.

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 Joplin Concrete Company, Inc. - PORT-0616 from the Air Pollution Control Program.

No NOEE/NOV's have been issued either to Joplin Concrete Company, Inc.'s stationary plant at the site (097-0142) or to Joplin Concrete Company, Inc. - PORT-0616 in the last five years.

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are not site specific and should not vary from site to site. Since this is a new plant, there are no existing emissions. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8,760 hours per year). The conditioned potential emissions account for a production limit to satisfy the NAAQS for PM₁₀.

Table 1: Emissions Summary (tons per year)

Air Pollutant	^c De Minimis Level	^a Potential Emissions of the Process Equipment	^b Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	27.07	184.22	87.25
PM ₁₀	15.0	9.72	45.57	21.58
PM _{2.5}	10.0	4.63	14.27	6.76
SO _x	40.0	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A
GHG (CO ₂ e)	75,000	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A

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

^aExcludes haul road and storage pile emissions

^bIncludes site specific haul road and storage pile emissions

AAQIA Table

Maximum impact is based on 8,760 hours operation per year. Limited impact shows compliance with NAAQS.

Table 2: Ambient Air Quality Impact Analysis

Pollutant	^a NAAQS ($\mu\text{g}/\text{m}^3$)	Averaging Time	^b Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$)	Limited Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	^c Daily Limit (tons/day)
^d PM ₁₀ (same)	150.0	24-hour	374.04	130.0	20.0	3,182

^aNational Ambient Air Quality Standards (NAAQS)

^bModeled impact at maximum capacity with controls

^cIndirect limit based on compliance with NAAQS.

^dOperation with other plants that are owned by The Monarch Cement Company

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 concrete plant 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 percent (%) by weight.

Emissions from the concrete batch plant were calculated using emission factors from AP-42 Section 11.12 "Concrete Batching," June 2006. This section cites Equation (1) in Section 13.2.4 "Aggregate Handling and Storage Piles," November 2006 for calculating the emissions from aggregate and sand transfer. The cement silo is controlled with baghouses, so the controlled emission factor was used. Emissions from the aggregate weigh hopper were calculated using AP-42 Section 13.2.4, Equation (1). Emissions from mix truck loading are controlled by a shroud vented to a baghouse, so the controlled emission factor was used.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.1 "Paved Roads," November 2006. A 90% control efficiency for PM and PM₁₀ and a 40% control efficiency for PM_{2.5} are 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 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 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 National Ambient Air Quality Standard (NAAQS) or Risk Assessment Level (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 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

OPERATING SCENARIOS

The plant is permitted to operate with other plants under the same ownership located at the site as long as the NAAQS is not exceeded. The following scenario explains how Joplin Concrete Company, Inc. - PORT-0616 shall demonstrate compliance with the NAAQS.

- When plants that are owned by The Monarch Cement Company, which are referred to as same owner plants, are located at the site, The Monarch Cement Company must calculate the daily impact of each plant and limit the total impact of all plants so it does not exceed the NAAQS using Attachment A.

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 PM and PM₁₀ are above de minimis levels.

APPLICABLE REQUIREMENTS

No operating permit is required for the plant because it is portable.

Nonroad engines are not subject to 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*, and the rest of the plant does not produce sulfur compounds.

Calculations demonstrate that this plant is exempt from 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter From Industrial Processes*, per 10 CSR 10-6.400(1)(B)16.

None of the New Source Performance Standards (NSPS) apply to the plant.

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 plant.

Joplin Concrete Company, Inc. - PORT-0616 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.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *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

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.

Cheryl Steffan
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 April 8, 2013, received April 11, 2013, designating The Monarch Cement Company 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.

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.)

Mr. Joe Hug
Technical Services Manager
Joplin Concrete Company, Inc. - PORT-0616
PO Box 1000
Humboldt, KS 66748

RE: New Source Review Permit - Project Number: 2013-04-040

Dear Mr. Hug:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions 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 and your new source review permit application 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 Cheryl Steffan, at the department's 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

Susan Heckenkamp
New Source Review Unit Chief

SH:csl

Enclosures

c: Southwest Regional Office
PAMS File: 2013-04-040

Permit Number: