

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: 062012-006 Project Number: 2011-09-058

Installation ID: 101-0064

Parent Company: E and S Rock, LLC

Parent Company Address: 20004 E. Yocum Rd., Independence, MO 64058

Installation Name: E and S Rock, LLC

Installation Address: 0.85 miles west of Hwy 131 on Hwy 2, Holden, MO 64040

Location Information: Johnson County, S4&9, T44N, R28W

Application for Authority to Construct was made for: A generic stationary rock crushing plant consisting of one 500 ton per hour crusher, two screens, 15 conveyors, and associated storage piles and haul roads. 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.

JUN 18 2012

EFFECTIVE DATE

*Kyra L Moore*  
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 startup 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 startup 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.	2011-09-058

**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."*

Installation: E and S Rock, LLC

Installation ID Number: 101-0064

Installation Address: 0.85 miles west of Hwy 131 on Hwy 2, Holden, MO 64040

Installation County: Johnson S4&9, T44N, R28W

1. Generic Plant Designation and Maximum Combined Hourly Design Rate  
E and S Rock, LLC has been designated to be a Generic Plant Operation. The combined Maximum Hourly Design Rate (MHDR) of each of the following generic equipment types shall not exceed the rates and numbers listed in Table 1.

Table 1: Generic Equipment

Equipment Type	Maximum Combined Hourly Design Rate	Maximum Number of Units
Primary Unit (Primary Crusher)	500 tons per hour	1
Feeder/Grizzly	500 tons per hour	1
Conveyors, Stackers	7,500 tons per hour	15
Screens	1,000 tons per hour	2

2. Generic Plant Equipment Identification Requirement
  - A. E and S Rock, LLC 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).

Page No.	4
Permit No.	
Project No.	2011-09-058

**GENERAL SPECIAL CONDITIONS:**

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- 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.
- 4) E and S Rock, LLC 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. E and S Rock, LLC 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  
E and S Rock, LLC 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. Best Management Practices Requirement  
E and S Rock, LLC 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.
5. Ambient Air Impact Limitation
  - A. E and S Rock, LLC shall not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for particulate matter less than ten microns in aerodynamic diameter ( $PM_{10}$ ) of  $150.0 \mu\text{g}/\text{m}^3$  24-hour average in ambient air.
  - B. E and S Rock, LLC shall demonstrate compliance with special condition 5.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. E and S Rock, LLC shall account for the impacts from other sources of  $PM_{10}$  as instructed in the attachments.
  - C. E and S Rock, LLC is exempt from the requirements of special condition 5.B. when no other plants are operating at this site.
6. Annual Emission Limit
  - A. E and S Rock, LLC shall emit less than 15.0 tons of particulate matter less than ten microns in diameter ( $PM_{10}$ ) in any 12-month period from the entire installation.

Page No.	5
Permit No.	
Project No.	2011-09-058

**GENERAL SPECIAL CONDITIONS:**

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

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- B. E and S Rock, LLC shall demonstrate compliance with special condition 6.A. using Attachment C or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
7. Moisture Content Testing Requirement
- A. E and S Rock, 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.
  - 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 E and S Rock, 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 7.A., another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, E and S Rock, 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 Air Pollution Control Program Compliance Assistance section 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, E and S Rock, LLC may obtain test results that demonstrate compliance with the moisture content in special condition 7.A. from the supplier of the aggregate.
8. Minimum Distance to Property Boundary Requirement
- The combined, self-contained feeder/grizzly/primary crusher shall be located at least 500 feet from the nearest property boundary.

Page No.	6
Permit No.	
Project No.	2011-09-058

**GENERAL SPECIAL CONDITIONS:**

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

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9. Primary Equipment Requirement  
E and S Rock, LLC shall process all rock through the combined, self-contained feeder/grizzly/primary crusher. Bypassing this combined unit is prohibited.
10. Nonroad Engine Requirement
  - A. E and S Rock, LLC shall construct and operate the generic plant's internal combustion engine such that it meets the definition of nonroad per 40 CFR 89.2.
  - B. E and S Rock, LLC shall keep records on site showing the date and reason for moving the internal combustion engine.
11. Record Keeping Requirement  
E and S Rock, 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.
12. Reporting Requirement  
E and S Rock, 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: 2011-09-058  
Installation ID Number: 101-0064  
Permit Number:

E and S Rock, LLC  
0.85 miles west of Hwy 131 on Hwy 2  
Holden, MO 64040

Complete: November 30, 2011

Parent Company:  
E and S Rock, LLC  
20004 E. Yocum Rd.  
Independence, MO 64058

Johnson County, S4&9, T44N, R28W

PROJECT DESCRIPTION

E and S Rock, LLC proposes to construct a generic, stationary rock crushing installation to be named Anstine Quarry. The primary unit is an Eagle 1400 self-contained impact crusher, model 33D5586, serial 11344, year 1993. This unit is equipped with a grizzly feeder, impact crusher, discharge conveyors, and is powered by a 465 horsepower Caterpillar 3408C diesel engine, serial 9ER00449, Tier 1 rated. The crusher's MHDR is 500 tons per hour, as provided by the applicant. This unit is mounted on axles and wheels and is portable (designed to be towed, but not self-propelled) in nature, but is being permitted as a stationary unit. The applicant has indicated the unit will be moved within the installation (e.g. to follow the quarry rock face), therefore the diesel engine meets the definition of nonroad at the time of permit issuance. The engine emissions were not evaluated for this review. 40 CFR 63 Subpart ZZZZ, "National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", and 40 CFR 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" do not apply. The generic installation will also include up to two screens, fifteen additional conveyors, and unpaved haul roads. No other plants are located at the site.

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 Johnson County, an attainment area for all 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. No permits have been issued to E and S Rock, LLC from the Air Pollution Control Program.

## TABLES

The table below summarizes the emissions of this project. The existing actual emissions were cited from the previous year's emission inventory questionnaire (EIQ). 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 are based upon a voluntary limit to avoid increment modeling for PM<sub>10</sub> at the time of permit issuance. Other pollutants are indirectly conditioned.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	N/A	N/A	75.29	48.08
PM <sub>10</sub>	15.0	N/A	N/A	23.49	< 15.0
PM <sub>2.5</sub>	10.0	N/A	N/A	12.01	7.67
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

Table 3: Ambient Air Quality Impact Analysis

Pollutant	<sup>a</sup> NAAQS (µg/m <sup>3</sup> )	Averaging Time	<sup>b</sup> Maximum Modeled Impact (µg/m <sup>3</sup> )	Limited Impact (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	<sup>c</sup> Daily Limit (tons/day)
<sup>d</sup> PM <sub>10</sub> (solitary)	150.0	24-hour	100.23	N/A	20.0	N/A
<sup>e</sup> PM <sub>10</sub> (separate)	150.0	24-hour	N/A	90.0	60.0	N/A

<sup>a</sup>National Ambient Air Quality Standards (NAAQS).

<sup>b</sup>Modeled impact at maximum capacity with controls.

<sup>c</sup>Indirect limit based on compliance with NAAQS.

<sup>d</sup>Solitary operation or operation with other plants that are owned by E and S Rock, LLC.

<sup>e</sup>Operation with other plants that are not owned by E and S Rock, LLC.

## 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 inherent moisture content of the crushed rock is at least 1.5 percent (%) by weight.

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%, 90%, and 40% control efficiency is applied to the PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emission calculations for the use of BMPs, respectively. 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 at least 1.5% 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 3. The Air Pollution Control Program requires an AAQIA of PM<sub>10</sub> for all asphalt, concrete and rock-crushing plants regardless of the level of PM<sub>10</sub> 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. Although potential emissions of PM are indirectly conditioned to minor source levels, no modeling was performed because there is no NAAQS or increment standard for PM.

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/m<sup>3</sup> of PM<sub>10</sub> 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 E and S Rock, LLC shall demonstrate compliance with the NAAQS.

- When no other plants are located at the installation, E and S Rock, LLC does not need to calculate the daily impact.
- When plants that are owned by E and S Rock, LLC, which are referred to as same owner plants, are located at the site, E and S Rock, LLC must calculate the daily impact of each plant and limit the total impact of all plants below the NAAQS using Attachment A.

- When plants that are not owned by E and S Rock, LLC, which are referred to as separate owner plants, are located at the site, E and S Rock, 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 E and S Rock, LLC that are operating at the site. This total is limited below the NAAQS. E and S Rock, LLC will limit the total impact of all plants they own and operate at the site to 90  $\mu\text{g}/\text{m}^3$  when any plants they do not own are located at the site. E and S Rock, LLC is not permitted to operate with any plant that is not owned by E and S Rock, LLC that has a separate owner background greater than 40  $\mu\text{g}/\text{m}^3$ . During this scenario, E and S Rock, 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  $\text{PM}_{10}$  are conditioned below the de minimis level. Potential emissions of  $\text{PM}_{2.5}$  are indirectly conditioned below the de minimis level. Potential emissions of PM are indirectly conditioned but remain at minor source levels.

#### APPLICABLE REQUIREMENTS

E and S Rock, 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.

#### GENERAL REQUIREMENTS

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

- 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.

## 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.

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David Little  
Environmental Engineer

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 30, 2011, received September 30, 2011, designating E and S Rock, LLC 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 December 22, 2011.







## 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 emissions<sup>1</sup> 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

<sup>1</sup>For 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. Terry Snelling  
Owner  
E and S Rock, LLC  
20004 E. Yocum Rd.  
Independence, MO 64058

RE: New Source Review Permit - Project Number: 2011-09-058

Dear Mr. Snelling:

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 David Little, 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:dll

Enclosures

c: Kansas City Regional Office  
PAMS File: 2011-09-058

Permit Number: