 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: 102013-005
Project Number: 2013-04-033
Installation Number: 093-0005

Parent Company: The Doe Run Resources Corporation
Parent Company Address: 270 Forest Road 2231, Boss, MO 65440
Installation Name: The Doe Run Company - Buick Mine/Mill
Installation Address: 270 Forest Road 2231, Boss, MO 65440
Location Information: Iron County, S26, T34N, R2W

Application for Authority to Construct was made for:
The installation of a rock crusher. 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.

OCT 10 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 these air contaminant sources. 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 these air contaminant sources.

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 sources(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.
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.”

The Doe Run Company - Buick Mine/Mill
Iron County, S26, T34N, R2W

1. Production Limitations
   A. The Doe Run Company - Buick Mine/Mill shall not process more than 296,296 tons per year of aggregate in the crusher (EP101) in any consecutive 12-month period.
   
   B. Attachment A, or equivalent forms, such as electronic forms, shall be used to demonstrate compliance with Special Condition 1.A.

2. Lead Concentration Limitation
   A. The Doe Run Company – Buick Mine/Mill shall not process rock with more than 3.0% lead content in the crusher (EP101).
   
   B. To show compliance with Special Condition 2.A., The Doe Run Company – Buick Mine/Mill shall perform tests on the lead content of each shot of rock processed by the crusher. The results of these tests shall be kept onsite and be made available to Missouri Department of Natural Resources’ personnel upon request.

3. Record Keeping and Reporting Requirements
   A. The Doe Run Company - Buick Mine/Mill 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. These records shall include MSDS for all materials used
   
   B. The Doe Run Company - Buick Mine/Mill shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.
The Doe Run Company - Buick Mine/Mill
270 Forest Road 2231
Boss, MO 65440

Parent Company:
The Doe Run Resources Corporation
270 Forest Road 2231
Boss, MO 65440

Iron County, S26, T34N, R2W

REVIEW SUMMARY

- The Doe Run Company - Buick Mine/Mill has applied for authority to construct a new rock crusher in its underground mine.

- HAP emissions are expected from the proposed equipment. The HAP of concern from this process is lead.

- None of the New Source Performance Standards (NSPS) apply to the proposed equipment. 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants, and 40 CFR 60, Subpart LL, Standards of Performance for Metallic Mineral Processing Plants, do not apply to the crusher because it is underground.

- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.

- No control device is being used to control the emissions from the equipment in this permit.

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

- This installation is located in Iron 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.
• Ambient air quality modeling was not performed since the conditioned potential emissions of lead are below the Screening Model Action Level (SMAL)

• Emissions testing is not required for the equipment.

• The facility currently has a Part 70 Operating Permit renewal application being processed by the Air Pollution Control Program (Project 2008-01-010). The equipment of this permit will be added into the application. The facility is not required to submit any paperwork to include these equipment in the current Part 70 Operating Permit renewal application.

• Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

The Doe Run Company – Buick Mine/Mill is a metallic mineral processing plant consisting of an underground lead ore mine and a surface ore-concentrating mill. The installation is a major source for construction permits and a Part 70 source for operating permits. Currently, the facility has a Part 70 renewable application being reviewed by the Air Pollution Control Program (Project 2008-01-010)

The following New Source Review permits have been issued to the installation from the Air Pollution Control Program.

Table 1: Permit History

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0480-007</td>
<td>Operating a lead-zinc-copper mine.</td>
</tr>
<tr>
<td>0394-007</td>
<td>Installing a new crusher.</td>
</tr>
<tr>
<td>0895-026</td>
<td>Installing a concrete batch plant in the underground mine.</td>
</tr>
<tr>
<td>1197-027</td>
<td>Installing a new concrete batch plant in the underground mine.</td>
</tr>
<tr>
<td>1297-017</td>
<td>Installing a portable conveyor and storage pile.</td>
</tr>
<tr>
<td>1297-017A</td>
<td>Correcting serial number for the portable conveyor.</td>
</tr>
</tbody>
</table>

PROJECT DESCRIPTION

The Doe Run Company proposes to re-start a 20-inch Rogers-Stone Jaw crusher in the underground mine. The maximum hourly design rate of the crusher is estimated to be 100 tons per hour. The crusher will be used to crush waste rock with ore content too low to be used for production, and the waste rock will be placed on the underground haul roads for maintenance. The crusher will be powered through electrical power so no diesel engine will be used. No control device will be used to control emissions from the crusher. However, the placement of the crusher in the underground mine and the high moisture content in the mine is expected to provide some control of particulate emissions.
EMISSIONS/CONTROLS EVALUATION

PM$_{2.5}$, PM$_{10}$, PM and lead emissions are expected from the crusher. PM$_{2.5}$, PM$_{10}$ and PM emissions were calculated using an emission factor developed from emissions testing data from another mine in Missouri (Westfork Mine operated by ASARCO). The test only provided emission factor for PM emissions, but for this project, it was assumed conservatively that all PM is also PM$_{2.5}$ and PM$_{10}$. Lead emissions were calculated by multiplying the PM emissions by the maximum lead content in the rock. The facility estimates that the average lead content in the rock would be less than 1%. However, the cutoff for use as waste rock is approximately 3%. The higher value is used in the PTE calculations. The geologists at the mine grades each shot of rock. Doe Run Company – Buick Mine/Mill is required, as a condition in this permit, to perform the tests and to keep the results of these tests onsite to show that the lead content of the waste rock is less than 3%.

The following table provides an emissions summary for this project. Installation-wide potential emissions were calculated in Permit 0394-007, but it is not clear if the results reflect the current facility. Therefore, the existing potential emissions of the application were not listed. Instead, pollutants were either listed as greater than major source levels (>major), less than major source levels (<major), or not determined (N/D). Existing actual emissions were taken from the installation’s 2012 EIQ. Potential emissions of the application represent the potential of the crusher, assuming continuous operation (8760 hours per year). The conditioned potential emission of the project is based on a limit of 0.01 tons per year of lead to avoid modeling requirements. The facility is limited to 0.01 tons per year of lead through a production limit of 296,296 tons per year (See Special Condition 1.A.)

Table 2: Emissions Summary (tons per year)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>1$^{\text{Re}}$Regulatory De Minimis/SMAL Levels</th>
<th>2$^{\text{Ex}}$Existing Potential Emissions</th>
<th>Existing Actual Emissions (2012 EIQ)</th>
<th>Potential Emissions of the Project</th>
<th>Project Conditioned Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>25.0</td>
<td>&gt;Major</td>
<td>N/D</td>
<td>0.99</td>
<td>0.33</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>15.0</td>
<td>&gt;Major</td>
<td>51.76</td>
<td>0.99</td>
<td>0.33</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>10.0</td>
<td>N/D</td>
<td>7.81</td>
<td>0.99</td>
<td>0.33</td>
</tr>
<tr>
<td>SOx</td>
<td>40.0</td>
<td>&lt;Major</td>
<td>0.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>NOx</td>
<td>40.0</td>
<td>&gt;Major</td>
<td>0.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC</td>
<td>40.0</td>
<td>&lt;Major</td>
<td>2.29</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CO</td>
<td>100.0</td>
<td>&gt;Major</td>
<td>0.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Lead</td>
<td>0.6/0.01</td>
<td>&gt;Major</td>
<td>1.02</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>HAPs</td>
<td>10.0/25.0</td>
<td>&gt;Major</td>
<td>$^{3}$1.14</td>
<td>0.03</td>
<td>0.01</td>
</tr>
</tbody>
</table>

N/A – Not Applicable, N/D – Not Determined
Note 1: For lead, 0.01 tpy is the Screening Model Action Level (SMAL). All other values are the de minimis levels.
Note 2: Determined from Permit 0394-007
Note 3: In the 2012 EIQ, the HAP emissions were reported as 0.11 tpy and did not include the lead emissions, which was 1.02 tpy. The two values were added together to determine the total HAPs.
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 all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

The Doe Run Company - Buick Mine/Mill 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
- *Operating Permits*, 10 CSR 10-6.065
- *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 (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Chia-Wei Young  
New Source Review Unit

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated April 3, 2013, received April 8, 2013, designating The Doe Run Resources Corporation as the owner and operator of the installation.

- Letter from the Air Pollution Control Program to ASARCO, Inc. dated January 28, 1998, detailing the recommended emission factor to be used at secondary ore crushing and related operations at lead mines.
Attachment A – Annual Production Tracking Sheet

The Doe Run Company - Buick Mine/Mill
Iron County, S26, T34N, R2W
Project Number: 2013-04-033
Installation ID Number: 093-0005
Permit Number: ________

This sheet covers the period from ________ to ________.  
(month, year)        (month, year)

<table>
<thead>
<tr>
<th>Month</th>
<th>Production (tons)</th>
<th>12-Month Production (tons)</th>
</tr>
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<tbody>
<tr>
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Note 1: 12-Month Production (tons) calculated by adding this month’s production (tons) to the production of the last eleven (11) months (tons). A total less than **296,296 tons** indicates compliance.
APPENDIX A
Abbreviations and Acronyms

% .......... percent
°F .......... degrees Fahrenheit
acfm ...... actual cubic feet per minute
BACT ..... Best Available Control Technology
BMPs ..... Best Management Practices
Btu......... British thermal unit
CAM ...... Compliance Assurance Monitoring
CAS ........ Chemical Abstracts Service
CEMS ..... Continuous Emission Monitor System
CFR ........ Code of Federal Regulations
CO .......... carbon monoxide
CO₂ ........ carbon dioxide
CO₂e ...... carbon dioxide equivalent
COMS ..... Continuous Opacity Monitoring System
CSR .......... Code of State Regulations
dscf ......... dry standard cubic feet
EIQ .......... Emission Inventory Questionnaire
EP .......... Emission Point
EPA ......... Environmental Protection Agency
EU ........... Emission Unit
fps .......... feet per second
ft .......... feet
GACT ..... Generally Available Control Technology
GHG ...... Greenhouse Gas
gpm ...... gallons per minute
gr .......... grains
GWP ...... Global Warming Potential
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
MMBtu .... Million British thermal units
MMCF ...... million cubic feet
MSDS ..... Material Safety Data Sheet
NAAQS ... National Ambient Air Quality Standards
NESHAPs ............................................. National Emissions Standards for Hazardous Air Pollutants
NOₓ .......... nitrogen oxides
NSPS ...... New Source Performance Standards
NSR ........ New Source Review
PM .......... particulate matter
PM₂.₅ ...... particulate matter less than 2.5 microns in aerodynamic diameter
PM₁₀ ...... particulate matter less than 10 microns in aerodynamic diameter
ppm ...... parts per million
PSD ....... Prevention of Significant Deterioration
PTE .......... potential to emit
RACT ...... Reasonable Available Control Technology
RAL ...... Risk Assessment Level
SCC ....... Source Classification Code
scfm ...... standard cubic feet per minute
SIC ........ Standard Industrial Classification
SIP ......... State Implementation Plan
SMAL ...... Screening Model Action Levels
SOₓ .......... sulfur oxides
SO₂ ........ sulfur dioxide
tph ......... tons per hour
tpy .......... tons per year
VMT .......... vehicle miles traveled
VOC ....... Volatile Organic Compound
Ms. Genevieve Bodnar  
Sr. Environmental Engineer  
The Doe Run Company - Buick Mine/Mill  
P.O. Box 500  
Viburnum, MO 65566

RE: New Source Review Permit - Project Number: 2013-04-033

Dear Ms. Bodnar:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. 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 Young, Chia-Wei, at the Department of Natural Resources’ 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:cyl

Enclosures

c: Southeast Regional Office  
PAMS File: 2013-04-033

Permit Number: