PART 70
PERMIT TO OPERATE

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

Operating Permit Number: OP2018-050
Expiration Date: JUN 05 2023
Installation ID: 510-0809
Project Number: 2017-03-038

Installation Name and Address
PQ Corporation
4238 Geraldine Avenue
St. Louis, MO 63115
City of St. Louis

Parent Company’s Name and Address
PQ Corporation
300 Lindenwood Drive
Malvern PA, 19355

Installation Description:
PQ Corporation, located within the City of St. Louis, produces sodium silicate (water glass) and silica gel. Sodium silicate and silica gel are used in a variety of products including clarifying agent for alcoholic beverages.

The installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is a major source for particulate matter and nitrogen oxides.

Prepared by
Berhanu A. Getahun
Operating Permit Unit

Director or Designee
Department of Natural Resources

JUN 05 2018
Effective Date
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I. Installation Equipment Listing

EMISSION UNITS WITH LIMITATIONS
The following list provides a description of the equipment at this installation that emits air pollutants and that are identified as having unit-specific emission limitations.

<table>
<thead>
<tr>
<th>Emission Unit #</th>
<th>Description of Emission Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sodium Silicate Production</strong></td>
<td></td>
</tr>
<tr>
<td>EP1</td>
<td>Sand Tank</td>
</tr>
<tr>
<td>EP3</td>
<td>Sodium Silicate Melting &amp; Regenerating Furnace</td>
</tr>
<tr>
<td>EP4</td>
<td>Vibratory Conveyor</td>
</tr>
<tr>
<td>EP5</td>
<td>Dissolver Tanks</td>
</tr>
<tr>
<td>EP6</td>
<td>Boiler #1</td>
</tr>
<tr>
<td>EP12</td>
<td>Boiler #2</td>
</tr>
<tr>
<td><strong>Silica Gel Production</strong></td>
<td></td>
</tr>
<tr>
<td>EP102</td>
<td>Mill and Heater</td>
</tr>
<tr>
<td>EP103</td>
<td>Packaging Operations</td>
</tr>
<tr>
<td>EP104</td>
<td>Product Silo</td>
</tr>
<tr>
<td><strong>Emergency Generators</strong></td>
<td></td>
</tr>
<tr>
<td>GEN-01</td>
<td>80 KW Gel Plant Emergency Generator</td>
</tr>
<tr>
<td>GEN-02</td>
<td>80 KW ICD Emergency Generator</td>
</tr>
</tbody>
</table>

EMISSION UNITS WITHOUT SPECIFIC LIMITATIONS
The following list provides a description of the equipment that does not have unit specific limitations at the time of permit issuance.

<table>
<thead>
<tr>
<th>Description of Emission Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sodium Silicate Production</strong></td>
</tr>
<tr>
<td>Dense Phase Transport System (EP2) - Weigh hopper, including belt conveyors, for loading of soda ash and sand into furnace</td>
</tr>
<tr>
<td>Soda Ash Unloading</td>
</tr>
<tr>
<td>Soda Ash Elevator</td>
</tr>
<tr>
<td>Soda Ash Tank</td>
</tr>
<tr>
<td>Glass Vibrating Feeders</td>
</tr>
<tr>
<td>Batch Wetters</td>
</tr>
<tr>
<td>Liquid Product Tank - Installed after 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #3 - 12,308 Gallons, Installed before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #4 - 12,308 Gallons, Installed before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #5 - 12,308 Gallons, Installed before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #13 – 90,484 Gallons, Installed before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #14 – 90,484 Gallons, Installed before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #15 – 203,588 Gallons, Installed before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #16 – 73,445 Gallons, Installed before 03/24/1967</td>
</tr>
</tbody>
</table>
### Description of Emission Unit

<table>
<thead>
<tr>
<th>Description</th>
<th>Capacity</th>
<th>Installation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Silicate Tank #22</td>
<td>203,588 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #24</td>
<td>73,292 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #26</td>
<td>18,462 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #27</td>
<td>18,462 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #29</td>
<td>203,588 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #30</td>
<td>90,484 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #31</td>
<td>90,484 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #34</td>
<td>421,058 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #35</td>
<td>4,500,000 lb (Liquid)</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Sodium Silicate Tank #38</td>
<td>309,677 Gallons</td>
<td>Before 03/24/1967</td>
</tr>
<tr>
<td>Liquid Fill Tank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid Truck Loadout of Silicate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid Tank Car Loadout of Silicate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. 2 Fuel Oil Aboveground Storage Tank</td>
<td>46,900 Gallons</td>
<td>Installed 1926</td>
</tr>
<tr>
<td>Natural Gas Space Heaters (0.27 MMBtu/hr (total))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Silica Gel Production

- Sulfuric Acid Aboveground Storage Tank - 8,311 Gallons, Installed 1994
- Silica Gel Production Natural Gas/Propane Boiler (8.4 MMBtu/hr, Installed 1993)
- Gel Plant Air Handling Unit
- Product Refeed Station
- Liquid Sodium Silicate Storage Tank
- Liquid Magnesium Sulfate Storage Tank
II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued. The plant wide conditions apply to all emission units at this installation. All emission units are listed in Section I under Emission Units with Limitations and Emission Units without Limitations.

None
III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP1</td>
<td>Sand storage tank with fabric filter. Installed before 03/24/1967</td>
</tr>
</tbody>
</table>

**EP1 - Sand Storage Tank**

**Permit Condition EP1-001**

10 CSR 10-6.400  Restriction of Emission of Particulate Matter from Industrial Processes

**Emission Limitation:**
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the sand storage tank (EP1) in excess of 40.85 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the dissolver tank (EP1) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

**Monitoring/Recordkeeping/Reporting:**
Not required (See Statement of Basis).

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP3</td>
<td>32.7 MMBtu/hr direct-fired natural gas (with Fuel Oil No. 2 backup) furnace used to melt sand and soda ash to form sodium silicate. No control. MDHR = 8.3 tons per hour glass production. Installed 1926. Rebuilt October 2011 with no throughput increase.</td>
</tr>
</tbody>
</table>

**EP3 - Sodium Silicate Melting & Regenerating Furnace**

**Permit Condition EP3-001**

10 CSR 10-5.510  Control of Emission of Nitrogen Oxides - RACT Plan

**Emission Limitation:**
The permittee shall not exceed a thirty (30)-day rolling average oxygen (O₂) concentration of 3.0 percent by volume on a dry basis.

**Equipment and Operation Parameters:**
The permittee shall install, maintain, calibrate and operate a continuous O₂ analyzer sampling from the glass furnace exhaust prior to the flow induction device.

**Monitoring/Recordkeeping:**
1) The permittee shall calculate an average concentration each furnace operating hour from at least two (2) data points during each furnace operating cycle. These data points shall be taken after the burner
has stabilized and is at normal operating conditions. Reasonable downtime shall be allowed for analyzer calibration and maintenance.

2) The permittee shall record all such deviations in the furnace logbook, along with the corrective action measures taken to address the deviation.

**Reporting:**

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program, Compliances and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)(I.C.(III)).

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**Permit Condition EP3-002**

10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds

**Emission Limitation:**

When Fuel Oil No. 2 is used as a backup fuel, the permittee shall comply with the following:

1) Emissions from the operation of Sodium Silicate Melting & Regenerating Furnace shall not contain more than two thousand parts per million by volume (2,000 ppmv) of sulfur dioxide.

2) Stack gasses shall not contain more than seventy milligrams (70 mg) per cubic meter of sulfuric acid or sulfur trioxide or any combination of those gases averaged on any consecutive three (3)-hour time period.

**Compliance Demonstration:**

The permittee must determine compliance with the fuel sulfur content limitation of this permit condition as follows:

1) Fuel delivery records; or

2) Fuel sampling and analysis; or

3) Fuel supplier certification letters may be used as an alternate method of compliance.

**Monitoring/Recordkeeping:**

The permit shall maintain documentation supporting the fuel used is pipeline grade natural gas and records on the premises of the fuel suppliers analysis of distillate oil fired in the furnace which shows weight percentage of sulfur in the fuel.

**Reporting:**

1) The permittee must furnish the EPA Region VII all data necessary to determine compliance status.

2) The permittee shall report any deviations/exceedances of this permit condition using the annual compliance certification to the EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219 as required by Section V of this permit.

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1 10 CSR 10-6.260 was rescinded on November 30, 2015 and replaced by 10 CSR 10-6.261; however, the provisions of 10 CSR 10-6.260 currently remain in State Implementation Plan. The provisions of 10 CSR 10-6.260 will expire, once 10 CSR 10-6.261 is incorporated into the federally-approved SIP as a final EPA action.
**Permit Condition EP3-003**

10 CSR 10-6.261 Control of Sulfur Dioxide Emissions

**Emission Limitation:**
When Fuel Oil No. 2 is used as a backup fuel, the permittee must limit the fuel sulfur content of the fuel oil to no more than 35,249 parts per million (ppm). [10 CSR 10-6.261(3)(C)]

**Compliance Demonstration:**
The permittee must determine compliance with the fuel sulfur content limitation of this permit condition as follows:
1) Fuel delivery records; or
2) Fuel sampling and analysis; or
3) Fuel supplier certification letters may be used as an alternate method of compliance.

**Recordkeeping:**
1) The permittee must maintain fuel delivery/purchase receipts and/or fuel sampling tests as applicable or fuel oil supplier certification letters.
2) The permittee must maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel delivery documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
   a) The name, address, and contact information of the fuel supplier;
   b) The type of fuel (diesel or #2 fuel oil);
   c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
   d) The heating value of the fuel.
3) The permittee must use fuel sampling and analysis to determine sulfur weight percent, or equivalent, of fuel(s) in accordance with 10 CSR 10-6.040. This requirement does not apply if the permittee uses the fuel supplier certification as a method of compliance.
4) The permittee must retain all reports and records on-site for a minimum of five (5) years and make available within five (5) business days upon written or electronic request by the Director.

**Reporting:**
1) The permittee must furnish the Director all data necessary to determine compliance status.
2) The permittee shall report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the Director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be written and include the information listed in 10 CSR 10-6.261 (4) (A) 1.
3) The permittee shall report any deviations/exceedances of this permit condition using the annual monitoring report and annual compliance certification to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by Section V of this permit.

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2 Ibid
Permit Condition EP3-004

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes

Emission Limitation:
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the sodium silicate melting and regenerating furnace (EP3) in excess of 16.93 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the sodium silicate melting and regenerating furnace (EP3) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

Monitoring/Recordkeeping/Reporting:
Not required (See Statement of Basis).

EP4 – Vibratory Conveyor

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP4</td>
<td>Three (3) vibrating glass conveyors with fabric filter.</td>
</tr>
</tbody>
</table>

Permit Condition EP4-001

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes

Emission Limitation:
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the vibratory conveyor (EP4) in excess of 16.93 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the vibratory conveyor (EP4) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

Monitoring/Recordkeeping/Reporting:
Not required (See Statement of Basis).
EP5 – Dissolver Tanks

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP5</td>
<td>Three (3) dissolving tanks with scrubber.</td>
</tr>
</tbody>
</table>

Permit Condition EP5-001

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes

Emission Limitation:
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the dissolver tank (EP5) in excess of 40.85 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the dissolver tank (EP5) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

Monitoring/Recordkeeping/Reporting:
Not required (See Statement of Basis).

EP6 – Boiler #1

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP6</td>
<td>Boiler #1 – Natural gas fired 11.2 million British thermal units per hour (MMBtu/hr) boiler with fuel oil as a back-up fuel. No control. Installed 1984.</td>
</tr>
</tbody>
</table>

Permit Condition Permit Condition EP6-001

10 CSR 10-6.260 Restriction of Emissions of Sulfur Compounds

Operational Limitation:
1) The permittee shall not burn or permit the burning of any fuel oil containing more than two percent sulfur (2%) by weight for the months of October through March and four percent (4%) for the remaining months of the year. [10 CSR 10-6.260(3)(B)3.B.(I)]
2) The permittee must determine compliance with the fuel sulfur content limitation of this permit condition as follows:
   a) Fuel delivery records; or
   b) Fuel sampling and analysis; or
   c) Fuel oil supplier certification may be used as an alternate method of compliance.

Record Keeping:
1) The permittee must maintain fuel delivery/purchase receipts and/or fuel sampling tests.
2) The permittee must also maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel delivery documentation containing the following

3 Ibid
information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
   a) The name, address, and contact information of the fuel supplier;
   b) The type of fuel (diesel or #2 fuel oil);
   c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
   d) The heating value of the fuel.
3) The permittee must use fuel sampling and analysis to determine sulfur weight percent, or equivalent, of fuel(s) in accordance with 10 CSR 10-6.040.
4) The permittee must retain all reports and records on-site for a minimum of five (5) years and made available within five (5) business days upon written or electronic request by the director.

**Reporting:**
1) The permittee must furnish the EPA Region VII all data necessary to determine compliance status.
2) The permittee shall report any deviations/exceedances of this permit condition using the annual compliance certification to the EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219 as required by Section V of this permit.

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**Permit Condition EP6-002**

| 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions |

**Emission Limitation:**
When Fuel Oil No. 2 is used as a backup fuel, the permittee must limit the fuel sulfur content of the fuel oil to no more than 8,812 parts per million (ppm). [10 CSR 10-6.261(3)(C)]

**Compliance Demonstration:**
The permittee must determine compliance with the fuel sulfur content limitation of this permit condition as follows:
1) Fuel delivery records; or
2) Fuel sampling and analysis; or
3) Fuel supplier certification letters may be used as an alternate method of compliance.

**Recordkeeping:**
1) The permittee must maintain fuel delivery/purchase receipts and/or fuel sampling tests as applicable or fuel oil supplier certification letters.
2) The permittee must maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel delivery documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
   a) The name, address, and contact information of the fuel supplier;
   b) The type of fuel (diesel or #2 fuel oil);
   c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
   d) The heating value of the fuel.
3) The permittee must use fuel sampling and analysis to determine sulfur weight percent, or equivalent, of fuel(s) in accordance with 10 CSR 10-6.040. This requirement does not apply if the permittee uses the fuel supplier certification as a method of compliance.

---

4 Ibid
4) The permittee must retain all reports and records on-site for a minimum of five (5) years and make available within five (5) business days upon written or electronic request by the Director.

**Reporting:**

1) The permittee must furnish the Director all data necessary to determine compliance status.

2) The permittee shall report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the Director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be written and include the information listed in 10 CSR 10-6.261 (4) (A) 1.

3) The permittee shall report any deviations/exceedances of this permit condition using the annual monitoring report and annual compliance certification to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by Section V of this permit.

### EP12 – Boiler #2

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
</table>

### Permit Condition EP12-001

**Emission Limitation:**

1) The permittee shall not exceed 504 hours (21 days) of fuel oil No. 2 usage in any consecutive twelve (12) month period.

2) The permittee shall not exceed 131.4 million cubic feet of natural gas usage in any consecutive twelve (12) month period.

**Operational Limitation:**

The boiler shall be limited to burning pipeline grade natural gas and fuel oil with a sulfur content of no more than the fuel oil sulfur content by weight limit in 40 CFR Part 60, Subpart De of Permit Condition EP12-002.

**Monitoring/Recordkeeping:**

1) The permit shall maintain documentation supporting the fuel used is pipeline grade natural gas and records on the premises of the fuel suppliers analysis of distillate oil fired in the boiler which shows the sulfur content of the fuel oil.

2) The permittee shall record the monthly and running 12-month totals of each fuel usage (see Attachments C).

**Reporting:**

The permittee shall report to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the permittee determined that the emission unit exceeded the emission limitation(s) listed above. Any deviations from this permit
condition shall also be reported in the semi-annual monitoring report and annual compliance certification, as required by Section V of this permit.

**Permit Condition EP12-002**

10 CSR 10-6.070 New Source Performance Regulations
40 CFR 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

**Emission Limitation:**
1) The permittee shall not cause to be discharged into the atmosphere from Boiler #2 (EP12) any gases that contain SO\(_2\) in excess of 215 ng/l (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. [§60.42c (d)]
2) The permittee may determine compliance with the emission limits based on a certification from the fuel supplier, as described under §60.48c (f)(1). [§60.42c (h) & (h)(1)]
3) The SO\(_2\) emission limits and fuel oil sulfur limits apply at all times, including periods of startup, shutdown, and malfunction. [§60.42c (i)]

**Monitoring/Recordkeeping:**
1) For distillate oil: Records of fuel supplier certification. The Fuel Supplier Certification shall include the name of the oil supplier; and a statement from the oil supplier that the oil complies with the specifications for distillate oil (Distillate oil means fuel oil that complies with the specifications for Fuel Oil No. 1 or 2, as defined by the American society for Testing and Materials in ASTM D396-78, 89, 90, 92, 96, or 98 “Standard Specification of Fuel Oils”). [§60.48c(1) & §60.41c – Definition]
2) The permittee shall record and maintain records of the amounts of each fuel combusted during each calendar month (see Attachment C). [§60.48c(g)(2)]

**Reporting:**
The permittee shall submit records of fuel supplier certification with a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certification submitted represented all of the fuel combusted during the reporting period. The reporting period for the reports required is each six-month Period. All reports including calendar dates covered in the reporting period shall be submitted to the Air Pollution Control Program, Compliances and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All reports shall be postmarked by the 30th day following the end of the reporting period. [§60.48c (d), (e)(1), (e)(11) & (j)]
**EP102 through EP104 – Silica Gel Production**

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP102 Mill and Mill Furnace – BEPEX 9300091 mill with Dayco LV burner; Mikropul#288-12-100-TRH Baghouse.</td>
<td></td>
</tr>
<tr>
<td>EP103 Product Bagging Unit – Premier Tech DB770S; Mikropul 164s-b-20 Baghouse</td>
<td></td>
</tr>
<tr>
<td>EP104 Product Silo – Kennedy Silo with Emtrol cyclone; AIS Vacuum Filter Receiver. The baghouse is inherent parts of the process.</td>
<td></td>
</tr>
</tbody>
</table>

**Permit Condition EP102-001 and EP103-001**

10 CSR 10-6.060 Construction Permits Required  
City of St. Louis of Air Pollution Control Program Construction Permit No. 10-10-019  
Construction Permit No. 072017-018, Issued July 26, 2017

**Control Device Requirement – Baghouse:**

The permittee shall control emissions from the Silica Gel Mill/Classifier (and the Recovery Cyclone) [EP102] using baghouses. [Construction Permit 072017-018, Special Condition 2. A.]

**Monitoring:**

[Construction Permit 10-10-019, Section III: Conditions A, B, C and D] and [Construction Permit 072017-018, Special Condition 2. B, C, D, E and F]

1) The permittee shall operate the associated control device(s) for EP102 and EP103 whenever any source equipment modified and/or operational under the authority of this permit condition is operating. The emission units, emission control devices and monitoring instrumentation shall be operated, calibrated and maintained according to manufacturer’s specifications and/or good engineering practices.

2) The permittee shall monitor the operational parameters of the control devices used to reduce emissions from the Silica Gel production unit (EP102 and EP103) as specified in the table below. The acceptable range of each monitored parameter will be based on the recommended range of acceptable operation from the manufacturer.

**Control Device Monitoring Requirements**

<table>
<thead>
<tr>
<th>Control Device</th>
<th>Equipment Controlled</th>
<th>Monitored Parameter</th>
<th>Units</th>
<th>Frequency</th>
<th>Acceptable Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micropul Baghouse for EP102</td>
<td>Silica Gel Mill</td>
<td>Pressure Drop</td>
<td>Inches of water column</td>
<td>Daily</td>
<td>0.1 – 7.0 †</td>
</tr>
<tr>
<td>Durant Baghouse for EP103</td>
<td>Silica Gel Product Bagging</td>
<td>Pressure Drop</td>
<td>Inches of water column</td>
<td>Daily</td>
<td>0.1 – 7.0 †</td>
</tr>
</tbody>
</table>

† This range is based on the values recorded during the most recent approved performance test where compliance was demonstrated.

3) The permittee shall inspect all components of the air pollution control equipment not subject to wear or plugging, including structural components, housing, ducts and hoods, every six months.
4) All pipes and ducts used to transfer product and capture and collect air and air contaminants from source equipment constructed under the authority of this permit shall be enclosed, hard piped and sealed to achieve 100 percent capture of the emissions from the source equipment.

**Recordkeeping:**
[Construction Permit 10-10-019, Section IV: Recordkeeping B, C, D, G and H]

1) The permittee shall keep maintenance records for control equipment including filter changes, maintenance, and upset conditions (see Attachment D).
2) The permittee shall maintain records of the control device operating parameters specified in the monitoring section of this permit once every calendar day when the source equipment is in operation. The permittee shall record the time and date of each parameter reading and whether or not the recorded parameter was within the range specified (see Attachment E).
3) The permittee shall maintain a record of any equipment malfunctions (see Attachment D).
4) The permittee shall retain on-site a copy of the most recent source test results demonstrating compliance with emission limits in this permit at all times.
5) All records shall be kept for a minimum of 60 months and shall be made available to representatives available to representatives of Missouri Department of Natural Resources Air Pollution Control Program and/or US Environmental Protection Agency (EPA) upon request.

**Reporting:**
The permittee shall report to the Air Pollution Control Program, Compliances and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the permittee has knowledge of any deviation from or exceedance of the limits as outlined in this permit condition. Any deviations from this permit condition shall also be reported in the semi-annual monitoring report and annual compliance certification, as required by Section V of this permit.

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**Permit Condition EP102-002**

10 CSR 10-6.400  Restriction of Emission of Particulate Matter from Industrial Processes
40 CFR Part 64  Compliance Assurance Monitoring (CAM)

**Emission Limitation:**
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the mill and mill furnace (EP102) in excess of 3.71 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the mill and mill Furnace (EP-102) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

**Monitoring:**
1) The permittee is subject to the CAM plan contained in Attachment F.
2) **CAM Compliance Indicators:** The permittee shall use the following CAM Indicators to monitor the control device (baghouse):
   a) Visible Emissions
      i) The permittee shall monitor visible emissions from the baghouse stack exhaust using EPA Reference Method 22-like procedures on a daily basis to ensure no visible emissions during the operation of this unit. The permittee is only required to take readings when the emission unit is operating and when the weather conditions allow.
   b) Pressure Drop
i) The permittee shall check and document the baghouse pressure drop daily. The pressure drop across the baghouse shall be maintained within the range of 0.1 to 7.0 inches of water (H2O).

3) **CAM Compliance Indicator Range:** An excursion is defined as either the presence of visible emissions or as a pressure drop less than 0.1 inch H2O or a pressure drop greater than 7.0 inches H2O. An excursion of either indicator constitutes an excursion. If visible emissions are present when the pressure drop is within its specified indicator range and no baghouse problems are identified as the cause, the pressure drop indicator range shall be re-evaluated by the permittee. Excursions trigger an inspection, corrective action, and need to be reported in the next Semi-annual Monitoring Report; if an excursion results in excess emissions exceeding one hour, the permittee may elect to file a startup, shutdown, and malfunction assertion under 10 CSR 10-6.050 if appropriate to the situation.

4) **Continued operation:** Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, the permittee shall collect data at all required intervals when the emission unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of part 64. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. [§64.7(c)]

5) **Response to exceedances:** [§64.7(d)]
   a) Upon detecting an exceedance, the permittee shall restore operation of the emission unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. [§64.7(d)(1)]
   b) Determination of whether the permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process. [§64.7(d)(2)]

**Recordkeeping:**

1) **General Recordkeeping Requirements:**
   a) The permittee shall comply with the recordkeeping requirements specified in §70.6(a)(3)(ii). The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under part 64 (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). [§64.9(b)(1)]
   b) Instead of paper records, the permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such
alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [§64.9(b)(2)]

2) All records shall be maintained for five years.

3) These records shall be made available immediately for inspection to the Department of Natural Resources' personnel upon their verbal request and presentation of identification.

**Reporting:**

1) **General Reporting Requirements**: The permittee shall submit semi-annual monitoring certified by a responsible official using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program, Compliances and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III). The report shall include, at a minimum, the following information, as applicable: [§64.9(a)(1) & (2)]

a) All instances of deviations from permit requirements must be clearly identified;

b) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken;

c) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; [§64.9(a)(2)(i)]

d) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and [§64.9(a)(2)(ii)]

e) A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR 64.8. Upon completion of a QIP, the permittee shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring. [§64.9(a)(2)(iii)].

2) **Documentation of need for improved monitoring**: If the permittee identifies a failure to achieve compliance with this permit condition for which the approved monitoring did not provide an indication of an exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the Air Pollution Control Program and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [§64.7(e)]

3) The permittee shall report to the Air Pollution Air Pollution Control Program, Compliances and Enforcement Section, P. O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after any deviations/exceedance of the Emission Limitation. Any deviations from this permit condition shall also be reported in the semi-annual monitoring report and annual compliance certification, as required by Section V of this permit.
Permit Condition EP103-002

10 CSR 10-6.400  Restriction of Emission of Particulate Matter from Industrial Processes

**Emission Limitation:**
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the product bagging unit (EP103) in excess of 3.71 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the the product bagging unit (E103) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

**Monitoring/Recordkeeping/Reporting:**
As required by Permit Condition EP103-001.

Permit Condition EP104-001

10 CSR 10-6.400  Restriction of Emission of Particulate Matter from Industrial Processes

**Emission Limitation:**
1) The permittee shall not cause, suffer, allow or permit the emissions of particulate matter (PM) in any one (1) hour from the Product Silo (EP104) in excess of 3.71 pounds.
2) The permittee shall not cause, allow or permit the emission of particulate matter from the Product Silo (E104) in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

**Monitoring/Recordkeeping/Reporting:**
Not required (See Statement of Basis).
GEN-01 and GEN-02 – Natural Gas Emergency Generators

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
</tr>
</thead>
</table>
| GEN-01        | Plant Natural Gas-fired Emergency Generator - 80 Kilo Watt (KW) (105 Horse Power (HP))  
Manufacturer: Generac, Model: QT08046KNSN, Serial #: 60348463GXC01528  
Type: 4.6 liter V8, 4 stroke spark ignition engine.  
Manufacture Date: 7/15/2010, Date Ordered: 6/16/2010  
Installation Date: - 8/19/2011 |
| GEN-02        | Gel Plant Natural Gas-fired Emergency Generator – 60 Kilo Watt (KW) (80 HP)  
Manufacturer: Generac, Model: QT06024KNSX, Serial #: 9129263  
Type: 2.4 liter 4 Cylinder, 4 stroke spark ignition engine.  
Manufacture Date: 8/8/2014, Date Ordered: 7/25/2014  
Installation Date: - 10/18/2016 |

Permit Condition (GEN-01 and GEN-02) - 001

10 CSR 10-6.070 New Source Performance Regulations  
40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

Emission Limitation/Standards:
1) The permittee shall comply with the following emission standards  
[§60.4233(d), and Table 1 to Subpart JJJJ]

<table>
<thead>
<tr>
<th>Engine Type and Fuel</th>
<th>Maximum Engine Power</th>
<th>Emission Standardsa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 &lt;HP &lt; 130</td>
<td>g/HP-hr</td>
</tr>
<tr>
<td>GEN-01 and GEN -02</td>
<td></td>
<td>NOx</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

a Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O₂.

The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NOₓ + HC.

For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

2) The permittee shall operate and maintain the stationary SI ICE to achieve the emission standards as required in §60.4233 over the entire life of the engine. [§60.4234]

Operational Limitation:
The permittee shall install a non-resettable hour meter upon startup of the emergency engine.  
[§60.4237(c)]

Compliance Method:
1) The permittee shall demonstrate compliance according to the following method: [§60.4243(b)]
   a) Demonstrating compliance with the emission standards specified in §60.4233(e) and according to the requirements specified in §60.4244 and according to the following: [§60.4243(b)(2)]
      i) The permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with
good air pollution control practice for minimizing emissions. In addition, the permittee shall conduct an initial performance test to demonstrate compliance. [§60.4243(b)(2)(i)]

2) The permittee must operate the emergency stationary ICE according to the requirements in §60.4243(d)(1) through (3). In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in §60.4243(d)(1) through (3), is prohibited. If the permittee do not operate the engine according to the requirements in §60.4243(d)(1), §60.4243(d)(2)(i) and §60.4243(d)(3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines. [§60.4243(d)]

a) There is no time limit on the use of emergency stationary ICE in emergency situations. [§60.4243(d)(1)]

b) The permittee may operate the emergency stationary ICE for any combination of the purposes specified in §60.4243(d)(2)(i) for a maximum of 100 hours per calendar year. Any operation for nonemergency situations as allowed by §60.4243(d)(3) counts as part of the 100 hours per calendar year allowed in §60.4243(d)(2). [§60.4243(d)(2)]

i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [§60.4243(d)(2)]

3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in §60.4243(d)(2). Except as provided in §60.4243(d)(3)(i), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [§60.4243(d)(3)]

a) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [§60.4243(d)(3)(i)]

i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [§60.4243(d)(3)(i)(A)]

ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [§60.4243(d)(3)(i)(B)]

iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [§60.4243(d)(3)(i)(C)]

iv) The power is provided only to the facility itself or to support the local transmission and distribution system. [§60.4243(d)(3)(i)(D)]

v) The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local
transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [§60.4243(d)(3)(i)(E)]

**Performance Testing:**
While conducting performance tests, the permittee shall follow the procedures in §60.4244(a) through (e). [§60.4244]

**Notifications, Recordkeeping, and Reporting:**
1) The permittee shall meet the following notification, reporting and recordkeeping requirements: [§60.4245]
   a) The permittee shall retain records of the following information: [§60.4245(a)]
      i) All notifications submitted to comply with this subpart and all documentation supporting any notification. [§60.4245(a)(1)]
      ii) Maintenance conducted on the engine. [§60.4245(a)(2)]
2) The permittee shall retain records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. [§60.4245(b)]
3) The permittee shall submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed. [§60.4245(d)]
4) For engines that operate or are contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4243(d)(2)(ii) and (iii) or that operates for the purposes specified in §60.4243(d)(3)(i), the permittee must submit an annual report according to the requirements in paragraphs §60.4245(e)(1) through (3).
IV. Core Permit Requirements

The installation shall comply with each of the following regulations or codes. Consult the appropriate sections in the Code of Federal Regulations (CFR), the Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued. The following are only excerpts from the regulation or code, and are provided for summary purposes only.

10 CSR 10-6.045 Open Burning Requirements and
St. Louis City Ordinance 68657 §16 Open Burning Restrictions
1) No person shall cause, suffer, allow or permit the open burning of refuse.
2) No person shall conduct, cause or permit the conduct of a salvage operation by open burning.
3) No person shall conduct, cause or permit the disposal of trade waste by open burning.
4) No person shall cause or permit the open burning of leaves, trees or the byproducts therefrom, grass, or other vegetation.
5) It shall be prima-facie evidence that the person who owns or controls property on which open burning occurs, has caused or permitted said open burning.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions
1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
   a) Name and location of installation;
   b) Name and telephone number of person responsible for the installation;
   c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
   d) Identity of the equipment causing the excess emissions;
   e) Time and duration of the period of excess emissions;
   f) Cause of the excess emissions;
   g) Air pollutants involved;
   h) Estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
   i) Measures taken to mitigate the extent and duration of the excess emissions; and
   j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
2) The permittee shall submit the paragraph 1 information to the director in writing at least ten days prior to any maintenance, start-up or shutdown activity which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, notice shall be given as soon as practicable prior to the activity.
3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.
4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.

5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required
The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits
The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. The permittee shall retain the most current operating permit issued to this installation on-site. The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request.

The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.

10 CSR 10-6.100 Alternate Emission Limits
Proposals for alternate emission limitations shall be submitted on Alternate Emission Limits Permit forms provided by the Department. An installation owner or operator must obtain an Alternate Emission Limits Permit in accordance with 10 CSR 10-6.100 before alternate emission limits may become effective.

10 CSR 10-6.110 Reporting of Emission Data, Emission Fees and Process Information
1) The permittee shall submit a Full Emissions Report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the director.

2) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.

3) The permittee shall pay an annual emission fee per ton of regulated air pollutant emitted according to the schedule in the rule. This fee is an emission fee assessed under authority of RSMo. 643.079.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential
This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.
10 CSR 10-6.150 Circumvention
The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.165 Restriction of Emission of Odors
This requirement is a State Only permit requirement.
No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour. This odor evaluation shall be taken at a location outside of the installation’s property boundary.

10 CSR 10-6.170
Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin
1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
b) Paving or frequent cleaning of roads, driveways and parking lots;
c) Application of dust-free surfaces;
d) Application of water; and
e) Planting and maintenance of vegetative ground cover.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants
1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.
2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.
10 CSR 10-6.220  Restriction of Emission of Visible Air Contaminants

**Emission Limitation:**
1) The permittee shall not cause or permit to be discharged into the atmosphere from any source, not exempted under 10 CSR 10-6.220, any visible emissions with an opacity greater than 20%.
2) Exception: The permittee may discharge into the atmosphere visible emissions of up to 40% for a period not aggregating more than one (1) six (6) minutes period in any 60 minutes.

**Monitoring:**
1) The permittee shall conduct visible emission observations on each emission unit using the procedures contained in USEPA Test Method 22. The permittee is only required to make observations when the emission unit is operating and when the weather conditions allow. If the permittee observes no visible or other significant emissions using these procedures, then no further observations are required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
2) The permittee must maintain the following monitoring schedule:
   a) Observations must be made once per month. If a violation is noted, then
   b) Weekly observations shall be conducted for a minimum of eight (8) consecutive weeks. Should no violation of this regulation be observed during this period then monitoring reverts to monthly monitoring.

**Recordkeeping:**
The permittee shall maintain records of all observation results using Attachments A, B, and D (or equivalents), noting:
1) Whether any air emissions (except for water vapor) were visible from the emission units;
2) All emission units from which visible emissions occurred;
3) Whether the visible emissions were normal for the process;
4) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
5) The permittee shall maintain records of all USEPA Method 9 opacity tests performed.

10 CSR 10-6.250  Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

This is a State Only permit requirement.
The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the Department to monitor training provided to employees.
10 CSR 10-6.280 Compliance Monitoring Usage
1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, “Operating Permits”, and incorporated into an operating permit; and
   c) Any other monitoring methods approved by the director.
2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at an installation:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, “Operating Permits”, and incorporated into an operating permit; and
   c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
   a) Applicable monitoring or testing methods, cited in:
      i) 10 CSR 10-6.030, “Sampling Methods for Air Pollution Sources”;
      ii) 10 CSR 10-6.040, “Reference Methods”;
      iii) 10 CSR 10-6.070, “New Source Performance Standards”; and
      iv) 10 CSR 10-6.080, “Emission Standards for Hazardous Air Pollutants”; or
   b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

10 CSR 10-5.040 Use of Fuel in Hand-Fired Equipment Prohibited
No owner or operator shall operate applicable hand-fired fuel burning equipment unless the owner or operator meets the conditions set forth in 10 CSR 10-5.040. This regulation shall apply to all hand-fired fuel-burning equipment at commercial facilities including, but not limited to, furnaces, heating and cooking stoves and hot water furnaces. It shall not apply to wood-burning fireplaces and wood-burning stoves in dwellings, nor to fires used for recreational purpose, nor to fires used solely for the preparation of food by barbecuing or to other equipment exempted under 10 CSR 10-5.040. Hand-fired fuel-burning equipment is any stove, furnace, or other fuel-burning device in which fuel is manually introduced directly into the combustion chamber.

10 CSR 10-5.060 Refuse Not to be Burned in Fuel Burning Installations
(Rescinded on February 11, 1979, Contained in State Implementation Plan)
No person shall burn or cause or permit the burning of refuse in any installation which is designed for the primary purpose of burning fuel.
40 CFR Part 82 Protection of Stratospheric Ozone (Title VI)

1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
   a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR §82.106.
   b) The placement of the required warning statement must comply with the requirements of 40 CFR §82.108.
   c) The form of the label bearing the required warning statement must comply with the requirements of 40 CFR §82.110.
   d) No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR §82.112.

2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B of 40 CFR Part 82:
   a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices described in 40 CFR §82.156.
   b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment described in 40 CFR §82.158.
   c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR §82.161.
   d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with the record keeping requirements of 40 CFR §82.166. ("MVAC-like" appliance as defined at 40 CFR §82.152).
   e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR §82.156.
   f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR §82.166.

3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements contained in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. Federal Only - 40 CFR Part 82.
V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued,

10 CSR 10-6.065(6)(C)1.B  Permit Duration
10 CSR 10-6.065(6)(E)3.C  Extension of Expired Permits
This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed. If a timely and complete application for a permit renewal is submitted, but the Air Pollution Control Program fails to take final action to issue or deny the renewal permit before the end of the term of this permit, this permit shall not expire until the renewal permit is issued or denied.

10 CSR 10-6.065(6)(C)1.C  General Record Keeping and Reporting Requirements
1) Record Keeping
   a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
   b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources’ personnel upon request.

2) Reporting
   a) All reports shall be submitted to the Air Pollution Control Program, Compliance and Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
   b) The permittee shall submit a report of all required monitoring by:
      i) October 1st for monitoring which covers the January through June time period, and
      ii) April 1st for monitoring which covers the July through December time period.
   c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit, this includes deviations or Part 64 exceedances.
   d) Submit supplemental reports as required or as needed. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
      i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7.A of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.
ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.

iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's semiannual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.

e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.

f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065(6)(C)1.D Risk Management Plan Under Section 112(r)
If the installation is required to develop and register a risk management plan pursuant to Section 112(R) of the Act, the permittee will verify that it has complied with the requirement to register the plan.

10 CSR 10-6.065(6)(C)1.F Severability Clause
In the event of a successful challenge to any part of this permit, all uncontested permit conditions shall continue to be in force. All terms and conditions of this permit remain in effect pending any administrative or judicial challenge to any portion of the permit. If any provision of this permit is invalidated, the permittee shall comply with all other provisions of the permit.

10 CSR 10-6.065(6)(C)1.G General Requirements
1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.

2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.

5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 10 CSR 10-6.065(6)(C)1.
10 CSR 10-6.065(6)(C)1.H Incentive Programs Not Requiring Permit Revisions
No permit revision will be required for any installation changes made under any approved economic incentive, marketable permit, emissions trading, or other similar programs or processes provided for in this permit.

10 CSR 10-6.065(6)(C)1.I Reasonably Anticipated Operating Scenarios
None.

10 CSR 10-6.065(6)(C)3 Compliance Requirements
1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation’s right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
   a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
   b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
   d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
   a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
   b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219, as well as the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. The compliance certification shall include the following:
   a) The identification of each term or condition of the permit that is the basis of the certification;
   b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
   c) Whether compliance was continuous or intermittent;
   d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065(6)(C)6 Permit Shield
1) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date that this permit is issued, provided that:
   a) The applicable requirements are included and specifically identified in this permit, or
   b) The permitting authority, in acting on the permit revision or permit application, determines in writing that other requirements, as specifically identified in the permit, are not applicable to the installation, and this permit expressly includes that determination or a concise summary of it.
2) Be aware that there are exceptions to this permit protection. The permit shield does not affect the following:
   a) The provisions of section 303 of the Act or section 643.090, RSMo concerning emergency orders,
   b) Liability for any violation of an applicable requirement which occurred prior to, or was existing at, the time of permit issuance,
   c) The applicable requirements of the acid rain program,
   d) The authority of the Environmental Protection Agency and the Air Pollution Control Program of the Missouri Department of Natural Resources to obtain information, or
   e) Any other permit or extra-permit provisions, terms or conditions expressly excluded from the permit shield provisions.

10 CSR 10-6.065(6)(C)7 Emergency Provisions
1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7 shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
   a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
   b) That the installation was being operated properly,
   c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
   d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(6)(C)8 Operational Flexibility
An installation that has been issued a Part 70 operating permit is not required to apply for or obtain a permit revision in order to make any of the changes to the permitted installation described below if the changes are not Title I modifications, the changes do not cause emissions to exceed emissions allowable under the permit, and the changes do not result in the emission of any air contaminant not previously emitted. The permittee shall notify the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd.,
Lenexa, KS 66219, at least seven days in advance of these changes, except as allowed for emergency or upset conditions. Emissions allowable under the permit means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

1) Section 502(b)(10) changes. Changes that, under section 502(b)(10) of the Act, contravene an express permit term may be made without a permit revision, except for changes that would violate applicable requirements of the Act or contravene federally enforceable monitoring (including test methods), record keeping, reporting or compliance requirements of the permit.

a) Before making a change under this provision, The permittee shall provide advance written notice to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219, describing the changes to be made, the date on which the change will occur, and any changes in emission and any permit terms and conditions that are affected. The permittee shall maintain a copy of the notice with the permit, and the APCP shall place a copy with the permit in the public file. Written notice shall be provided to the EPA and the APCP as above at least seven days before the change is to be made. If less than seven days notice is provided because of a need to respond more quickly to these unanticipated conditions, the permittee shall provide notice to the EPA and the APCP as soon as possible after learning of the need to make the change.

b) The permit shield shall not apply to these changes.

10 CSR 10-6.065(6)(C)9 Off-Permit Changes

1) Except as noted below, the permittee may make any change in its permitted operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Insignificant activities listed in the permit, but not otherwise addressed in or prohibited by this permit, shall not be considered to be constrained by this permit for purposes of the off-permit provisions of this section. Off-permit changes shall be subject to the following requirements and restrictions:

a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is subject to any requirements under Title IV of the Act or is a Title I modification;

b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. This notice shall not be required for changes that are insignificant activities under 10 CSR 10-6.065(6)(B)3 of this rule. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change.

c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes; and

d) The permit shield shall not apply to these changes.
10 CSR 10-6.020(2)(R)34 Responsible Official
The application utilized in the preparation of this permit was signed by Stan Slusser, Regional Manager. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065(6)(E)6 Reopening-Permit for Cause
This permit shall be reopened for cause if:
1) The Missouri Department of Natural Resources (MoDNR) receives notice from the Environmental Protection Agency (EPA) that a petition for disapproval of a permit pursuant to 40 CFR § 70.8(d) has been granted, provided that the reopening may be stayed pending judicial review of that determination,
2) MoDNR or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
3) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
a) The permit has a remaining term of less than three years;
b) The effective date of the requirement is later than the date on which the permit is due to expire; or
c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
4) The installation is an affected source under the acid rain program and additional requirements (including excess emissions requirements), become applicable to that source, provided that, upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit; or
5) MoDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065(6)(E)1.C Statement of Basis
This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments
Attachments follow.
Attachment A: - Visible Emission Observations
10 CSR 10-6.220 Compliance Demonstration

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Emission Source</th>
<th>Visible Emissions</th>
<th>Excess Emissions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
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</table>

*If there are visible emissions, the permittee shall complete the excess emissions columns.*
Attachment B: Method 9 Opacity Emissions Observation
10 CSR 10-6.220 Compliance Demonstration

Method 9 Opacity Emissions Observations

<table>
<thead>
<tr>
<th>Company</th>
<th>Observer</th>
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<tr>
<td>Location</td>
<td>Observer Certification Date</td>
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<tr>
<td>Date</td>
<td>Emission Unit</td>
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<tr>
<td>Time</td>
<td>Control Device</td>
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<th>Hour</th>
<th>Minute</th>
<th>Seconds</th>
<th>Steam Plume (check if applicable)</th>
<th>Comments</th>
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**SUMMARY OF AVERAGE OPACITY**

<table>
<thead>
<tr>
<th>Set Number</th>
<th>Time</th>
<th>Opacity</th>
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<tr>
<td>Start</td>
<td>End</td>
<td>Sum</td>
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</tbody>
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Readings ranged from ______ to ______ % opacity.

Was the emission unit in compliance at the time of evaluation?

Yes  No  Signature of Observer
Attachment C: Monthly Fuel Usage Monitoring Log

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<thead>
<tr>
<th>Emission Unit</th>
<th>Month</th>
<th>Fuel Type</th>
<th>Amount</th>
<th>Units</th>
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Attachment D: Inspection/Maintenance/Repair/Malfunction Log

Emission Unit # or CVM # ________________________________

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Inspection/Maintenance Activities</th>
<th>Malfunction Activities</th>
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<tbody>
<tr>
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<td>Malfunction</td>
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Attachment E: Control Device Monitoring – Daily Records


This attachment may be used to demonstrate compliance with recordkeeping requirement 3 of Permit Condition EP102-001 and EP103-001. Electronic Records may be substituted. Monitored data may be summarized on this sheet for ease of demonstrating compliance.

Acceptable Range: ____________________________

<table>
<thead>
<tr>
<th>Daily Monitoring Performed:</th>
<th>Observed Value (in H₂O)</th>
<th>In Range? (circle Yes or No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Initials</td>
</tr>
<tr>
<td>Yes / No</td>
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<td></td>
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<td>Yes / No</td>
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<td>Yes / No</td>
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</tbody>
</table>

Copy this sheet as needed
**Attachment F: Compliance Assurance Monitoring Plan (CAM)**

<table>
<thead>
<tr>
<th>Indicator #1</th>
<th>Indicator #2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indicator</strong></td>
<td>Visible Emissions</td>
</tr>
<tr>
<td><strong>Measurement Approach</strong></td>
<td>Visible emissions from each baghouse exhaust shall be monitored using EPA Reference Method 22-like procedures.</td>
</tr>
<tr>
<td><strong>Indicator Range</strong></td>
<td>The indicator range is defined as no visible emissions. An excursion is defined as the presence of visible emissions.</td>
</tr>
<tr>
<td><strong>QIP Threshold</strong></td>
<td>An excursion of either indicator constitutes an excursion. If visible emissions are present when the pressure drop is within its specified indicator range, the pressure drop indicator range shall be re-evaluated by the permittee. Excursions trigger an inspection, corrective action, and need to be reported in the next Semi-annual Monitoring Report. Excursions shall be corrected immediately upon detection; if an excursion results in excess emissions exceeding 1 hour, the permittee may elect to file a startup, shutdown, and malfunction assertion under 10 CSR 10-6.050 if appropriate to the situation.</td>
</tr>
</tbody>
</table>

**Performance Criteria**

| **Data Representativeness** | Measurements shall be made at the emission point (i.e., baghouse exhaust). | Pressure drop taps are located at the inlet and outlet of each baghouse. The differential pressure gauges have a minimum accuracy of 0.25 in \( \text{H}_2\text{O} \). |
| **Verification of Operational Status** | NA | Pressure drop taps are checked for plugging quarterly or upon reasonable suspicion of gauge malfunction. |
| **QA/QC Practices and Criteria** | The visible emissions observer shall be familiar with EPA Reference Method 22 and follow Method 22-like procedures. | The differential pressure gauges shall be calibrated no less frequently than semi-annually in accordance with the manufacturer’s specifications. |
| **Monitoring Frequency** | A 6-minute Method 22-like observation shall be performed daily. | Continuously. |
| **Data Collection Procedure** | The VE observation is manually recorded (i.e., documented) daily by the observer. | An instantaneous measurement shall be manually recorded daily. |
| **Averaging Period** | NA | None |
| **Reporting** | Summary information on the number, duration, and cause for any excursions and differential pressure gauge downtime shall be reported semi-annually as part of P.Q. Corporation’s Part 70 Semi-annual Monitoring Report. |
STATEMENT OF BASIS

INSTALLATION DESCRIPTION
PQ Corporation, located within the City of St. Louis, produces sodium silicate (water glass) and silica gel. Sodium silicate and silica gel are used in a variety of products including clarifying agents for alcoholic beverages. The production of sodium silicate begins by unloading railcars of soda ash and sand into storage silos. From the storage silos, a carefully controlled amount of soda ash and sand are fused and reacted to produce sodium silicate. The sodium silicate is then solidified and conveyed to the storage silos.

Silica gel is produced by reacting sodium silicate with sulfuric acid. Once the silica gel has been produced, it is washed, dried and ground to the size specified by the customer. The drying and grinding are accomplished in the Mill Heater. From the Mill Heater, the silica gel is transported by air to the packaging operation.

This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is a major source for particulate matter and nitrogen oxides.

Updated Potential to Emit for the Installation and Reported Air Pollutant Emissions, tons per year

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>Potential to Emit$^1$</th>
<th>Reported Actual Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulate Matter ≤ Ten Microns (PM$_{10}$)</td>
<td>351.24</td>
<td>28.46</td>
</tr>
<tr>
<td>Particulate Matter ≤ 2.5 Microns (PM$_{2.5}$)</td>
<td>329.91</td>
<td>28.08</td>
</tr>
<tr>
<td>Sulfur Oxides (SO$_x$)</td>
<td>0.16</td>
<td>0.06</td>
</tr>
<tr>
<td>Nitrogen Oxides (NO$_x$)</td>
<td>180.38</td>
<td>90.02</td>
</tr>
<tr>
<td>Volatile Organic Compounds (VOC)</td>
<td>8.32</td>
<td>4.16</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>20.10</td>
<td>8.93</td>
</tr>
<tr>
<td>Hazardous Air Pollutants (HAP$_x$)</td>
<td>3.74</td>
<td>1.63</td>
</tr>
<tr>
<td>Ammonia (NH$_3$)</td>
<td>73.32</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Note:
- Emissions of PM10 from EP102 and EP103 combined are limited to less 15 tons/yr. [Construction Permit No. 10-10-019]
- Emissions of PM2.5 from EP102 and EP103 combined are limited to less 10 tons/yr. [Construction Permit No. 10-10-019].
- PTE from EP12 is based 131.4 million cubic feet of natural gas usage limit set by Construction Permit No. 99-08-058.
- Emissions from generators are evaluated at 200 hours of annual operation.
Permit Reference Documents
These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

1) Part 70 Operating Permit Application, received March 9, 2017;
2) 2016 Emissions Inventory Questionnaire, received March 1, 2017;
4) Construction Permit No. 07217-018 for the installation of a new silica gel mill/classifier, Issued July 26, 2017; and
5) City of St Louis Air Pollution Control Program Construction Permits and Source Registration Permits:

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Date Issued</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>94-05-025</td>
<td>May 20, 1994</td>
<td>Permit to install process equipment to manufacture Silica Gel</td>
</tr>
<tr>
<td>96-11-094</td>
<td>January 7, 1997</td>
<td>Permit to Operate Silica Gel Manufacturing Equipment</td>
</tr>
<tr>
<td>99-08-058</td>
<td>May 4, 2000</td>
<td>Supplemental Boiler</td>
</tr>
<tr>
<td>OP-2004-003</td>
<td>February 5, 2004</td>
<td>Part 70 State Operating Permit</td>
</tr>
<tr>
<td>OP-2005-010</td>
<td>March 18, 2005</td>
<td>Part 70 State Operating Permit (RACT Plan Reissue of OP-2004-003)</td>
</tr>
<tr>
<td>10-10-019</td>
<td>April 28, 2011</td>
<td>Gel Plant Mill Modification and a Production Limit Increase for the Silica Gel Production Line (Supersedes Permit Number 96-11-094)</td>
</tr>
</tbody>
</table>

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits
In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

None

Other Air Regulations Determined Not to Apply to the Operating Permit
The Air Pollution Control Program (APCP) has determined the following requirements to not be applicable to this installation at this time for the reasons stated.

1) 10 CSR 10-5.220, Control of Petroleum Liquid Storage, Loading and Transfer.
   According to 10 CSR 10-5.220 (1)(C)(1.B.), petroleum storage tanks that contain a petroleum liquid with a true vapor pressure less than 27.6 kilopascals (kPa) (4.0 psia) at ninety degrees Fahrenheit (90°F) are exempt from this rule. The installation only stores fuel oil number 2 which has a true vapor pressure of 0.016 psia at 90°F (AP-42, Table 7.1-2, Properties of Selected Petroleum Liquids) below the vapor pressure that triggers the requirements of the rule.
2) 10 CSR 10-5.500, *Control of Emissions from Volatile Organic Liquid Storage.*

The provisions of this rule shall apply to all storage containers of volatile organic liquid (VOL) with a maximum true vapor pressure of one-half pound per square inch (0.5 psia) or greater in any stationary tank, reservoir or other container of forty thousand (40,000) gallon capacity or greater, except to vessels listed in 10 CSR 10-5.500(1)(A)1. through 7. The installation only stores fuel oil number 2 which has a vapor pressure of less than 0.5 psia and is therefore exempt from the rule.

3) 10 CSR 10-5.540, *Control of Emissions from Batch Process Operations.*

This rule is applicable to all batch process operations that have the potential to emit equal to or greater than 100 tons per year of volatile organic compounds (VOC) at sources identified by any of the following four (4)-digit standard industrial classification (SIC) codes, as defined in the 1987 edition of the *Federal Standard Industrial Classification Manual:* SIC 2821, 2833, 2834, 2861, 2865, 2869, and 2879.

The SIC code 2819, associated with the activities at the installation is not considered in the list that triggers the requirements of the rule. In addition, potential emissions of VOCs do not exceed 100 tons per year. Therefore, the requirements of the rule are not triggered.

**Construction Permit History**

The following revisions were made to construction permits for this installation:

1) City of St. Louis Division of Air Pollution Control Construction Permit No. 99-01-006:

This permit was obtained for a proposed air conveying system to transport silica gel from the refeed station to a packaging silo. This system was never installed and the refeed station is not subject to the special conditions of the construction permit.

2) Construction Permit No. 072017-018:

This permit was issued on July 26, 2017 for the installation of a new silica gel mill/classifier (EP102). The conditions of this permit supersede Section II: Limitations A & B from Construction Permit 10-10-019, previously issued by the City of St. Louis Air Pollution Control Program.

Limitations A & B of Construction Permit 10-10-019, issued April 28, 2011 limited the emissions of PM_{10} and PM_{2.5} from EP102 and EP103 combined to 15 tons and 10 tons in any consecutive 12-month period, respectively. These limitations are no longer applicable because of the superseding conditions of Permit No. 072017-018.

**New Source Performance Standards (NSPS) Applicability**

10 CSR 10-6.070, *New Source Performance Regulations*

The installation is potentially subject to several NSPS rules. Below is a summary of the potentially applicable subparts and the facilities applicability and compliance status to those subparts.


The installation becomes subject to Subpart A - General Provisions upon becoming subject to an NSPS standard. If the installation is subject to various NSPS Standards; therefore, they are also subject to Subpart A.

2) 40 CFR Part 60, Subpart CC, *Standards of Performance for Glass Manufacturing Plants*

The provisions of this subpart apply to each glass melting furnace that commenced construction, reconstruction or modification on or after June 15, 1979. This subpart does not apply to hand glass
melting furnaces, glass melting furnaces designed to produce less than 4.55 Mg (5 tons) of glass per day and all-electric melters.

The installation is not a glass manufacturing plant; therefore this subpart does not apply to the glass melting furnace.

The provisions of this subpart apply to each fossil-fuel-fired steam generating unit of more than 73 megawatts heat input rate (250 million Btu per hour) constructed or modified after August 17, 1971 and not covered under Subpart Da.
None of the boilers are rated at greater than 73 megawatts heat input rate (250 million Btu per hour), therefore this subpart does not apply to this installation.

The provisions of this subpart apply to each electric utility fossil-fuel-(either alone or in combination with any other fuel) fired steam generating unit of more than 73 megawatts heat input rate (250 million Btu per hour) constructed or modified after September 18, 1978.
None of the boilers are electric utility steam generating units as defined in this subpart nor are rated at greater than 73 megawatts heat input rate (250 million Btu per hour), therefore this subpart does not apply to this installation.

5) 40 CFR Part 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.
The provisions of this subpart apply to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu per hour).
None of the boilers are rated at greater than 29 megawatts heat input rate (100 million Btu per hour), therefore this subpart does not apply to this installation.

6) 40 CFR Part 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
Subpart Dc applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu/hr) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).
This subpart applies to Boiler #2 (EP12) because the boiler is a steam generating unit constructed, modified, or reconstructed after June 19, 1984. All other steam generating units were either installed prior to the applicability date of the subpart (June 9, 1989) or the maximum rated capacity of the unit is below the applicability threshold of the subpart (< 10 MMBtu/hr).

40 CFR Part 60, Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids


Subpart K, Ka nor Kb applies to the 46,900-gallon No. 2 Fuel Oil storage tank as the tank was installed prior to the applicability date of all three subparts and in the case of Subparts K and Ka, No. 2 Fuel Oil is specifically excluded as a petroleum liquid for the purpose of those subparts. All other liquid storage tanks on site are not used to store a petroleum liquid or other volatile organic liquid and/or are less than the applicability thresholds of the three subparts.


The natural gas fired spark ignition internal combustion engines (emergency generators identified as GEN-01 and GEN-02) at this installation do meet the construction and manufacture date identified in this subpart. Thus, they are subject to 40 CFR Part 60, Subpart JJJJ.

9) NSPS Applicability Summary

Based upon a comparison of the installations operations to each NSPS Standard, the installation is subject to the following NSPS Standards:

- 40 CFR Part 60 – Subpart De, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units; and

Maximum Achievable Control Technology (MACT) Applicability

10 CSR 10-6.075, Maximum Achievable Control Technology Regulations

1) 40 CFR Part 63, Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers - Area Sources

This regulation applies to boilers at area source facilities that burn coal, oil, biomass, or non-waste materials. Boilers burning natural gas as defined in this regulation would not be affected by the rule.

This regulation does not apply to the boilers because the boilers are natural gas fired boilers with Fuel Oil No. 2 as back-up. The rule exempts natural gas fired boilers with fuel oil as back-up fuel. According to this rule, gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.


The Subpart ZZZZ standards are applicable to Reciprocating Internal Combustion Engines (RICE) located at both major and/or area sources of hazardous air pollutants (HAPs) and RICE with a site rating of less than or equal to 500 brake horsepower (bhp). In addition, the standards for existing non-emergency compression ignition (CI) engines with a site rating of greater than 500 bhp at major
sources and revised provisions related to Startup, Shutdown, and Malfunction (SSM) events for engines previously regulated under the rule. Finally, emergency RICE with a rating greater than 500 bhp located at a major source are subject to this rule, but with limited requirements.

The natural gas fired spark ignition internal combustion engines (emergency generators identified as GEN-01 and GEN-02) that are subject to the 40 CFR Part 60, Subpart JJJJ are automatically compliant with the requirements of 40 CFR Part 63, Subpart ZZZZ and according to §63.6590(c)(1) of Subpart ZZZZ of 40 CFR Part 63, no further requirements apply for such engines under this part for “new” spark ignition engines

3) 40 CFR Part 63, Subpart SSSSSS, National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources. This subpart applies to glass manufacturing facility that is an area source of hazardous air pollutant (HAP) emissions and uses one or more continuous furnaces to produce glass that contains compounds of one or more glass manufacturing metal HAP, as defined in §63.11459, as raw materials in a glass manufacturing batch formulation.

Glass manufacturing metal HAP means an oxide or other compound of any of the following metals included in the list of urban HAP for the Integrated Urban Air Toxics Strategy and for which Glass Manufacturing was listed as an area source category: arsenic, cadmium, chromium, lead, manganese, and nickel.

The installation is not a glass manufacturing plant; therefore this subpart does not apply to the glass melting furnace.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability
1) 40 CFR Part 61 Subpart M – National Emission Standard for Asbestos. The installation is not subject to any NESHAP standard with the exception of Subpart M - National Emission Standard for Asbestos. The installation is potentially subject to Subpart M. If the installation conducts any demolition or renovation projects to a building(s) containing asbestos, they must determine applicability with the following NESHAP regulations:
   • Demolition and Renovation - 40 CFR 61.145
   • Waste Disposal for Manufacturing, Fabricating, Demolition, Renovation, and Spraying - 40 CFR 61.150

2) 40 CFR Part 61, Subpart N, National Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants, does not apply to this installation since the installation is not a glass manufacturing plant and the glass melting furnace does not use commercial arsenic as a raw material.

Compliance Assurance Monitoring (CAM) Applicability
40 CFR Part 64, Compliance Assurance Monitoring (CAM) The CAM rule applies to each pollutant specific emission unit that:
   • Is subject to an emission limitation or standard, and
   • Uses a control device to achieve compliance, and
   • Has pre-control emissions that exceed or are equivalent to the major source threshold.
Two specific emission units are potentially subject to CAM at the St. Louis facility: The Mill Heater (Unit ID EP102) and Silo Cyclone (Unit ID EP104). The Mill Heater and Silo Cyclone are equipped with baghouses and each has the potential to emit prior to control of greater than 100 tons per year of particulate matter (PM). PM is regulated under 10 CSR 10-6.400.

The exhaust from the Silo Cyclone baghouse is not exhausted to the ambient air but instead is recycled to convey the silica gel to the Cylo Cyclone. In order for CAM applicability criteria #2 to be satisfied, an emission unit subject to an emission standard must require a control device to meet the emission standard, where control device is defined as “equipment, other than inherent process equipment, that is used to destroy or remove air pollutant prior to discharge to the atmosphere.” It is possible for a piece of process equipment to be perceived as a control device, simply because it accomplishes emission reduction. However, equipment that is inherent to the process operation that achieves emission reduction as a co-benefit is not considered control equipment. The baghouse part of Silo Cyclone systems is inherent to the operation of the material transfer processes and provide for product recovery. Therefore, the baghouse does not meet CAM criteria #2 (i.e. the baghouse does not meet the 40 CFR 64 definition of control device), and the baghouse is not subject to CAM requirements.

The Mill Heater (Unit ID EP102) utilizes a control device to limit PM emissions from the process and has a potential to emit 983.13 tons of PM pre-control, which exceeds the major source threshold (applicability criteria #3). The Mill Heater has a process weight limit of 3.71 pounds of PM per hour and uses fabric filters to achieve this limit. Since the Mill Heater triggers all three CAM criteria, PQ Corporation has submitted CAM Plan as required by the CAM rule. The CAM plan is incorporated into this permit.

**Other Regulatory Determinations**

1) 10 CSR 10-6.6.405, *Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*
   
   According to 10 CSR 10-6.405(1)(C), an installation is exempt from this rule if all of the installation’s applicable units are fueled only by landfill gas, propane, natural gas, Fuel Oils Nos. 2 through 6 (with less than one and two-tenths percent (1.2 %) sulfur), or other gases (with hydrogen sulfide levels less than or equal to four (4) parts per million volume as measured using ASTM D4084, or equivalent and mercury concentrations less than forty (40) micrograms per cubic meter as measured using ASTM D5954, or ASTM D6350, or equivalent or any combination of these fuels.

   All the indirect heating sources operated at this installation exclusively combust natural gas/ propane and Fuel Oil No. 2, therefore the installation is not subject to this rule.

2) 10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*
   
   This rule applies to all particulate emitting sources listed in the emission units with limitations except the generators and emission units listed in emission units without limitations, i.e., equipment that does not have unit specific limitations at the time of permit issuance.

   At the time of issuance of this permit, the installation had already completed its weekly and bi-weekly observations, as required by the initial operating permit OP2004-003 conditions. The installation is currently conducting monthly observations as required by the previously mentioned permit condition.
The installation had performed the initial weekly/biweekly observations and has been performing monthly monitoring; therefore it will be required to continue visible emissions observation on a monthly basis unless a violation occurs. If a violation occurs, the monitoring frequency will revert to a weekly schedule. This tiered monitoring frequency of visible/no visible emissions observations using Method 22 like procedures is considered sufficient.

3) 10 CSR 10-6.260, Restriction of Emissions of Sulfur Compounds and 10 CSR 10-6.261, Control of Sulfur Dioxide Emissions.
10 CSR 10-6.260 was rescinded on November 30, 2015 and replaced by 10 CSR 10-6.261; however, the provisions of 10 CSR 10-6.260 currently remain in State Implementation Plan. The provisions of 10 CSR 10-6.260 will expire, once 10 CSR 10-6.261 is incorporated into the federally-approved SIP as a final EPA action.

a) Since SO\textsubscript{x} emissions from Boiler #1 (EP6) and the Mill (EP102) are from fuel combustion only, requirements governing fuel usage were the only requirements included as permit conditions for this rule for those emission units.

b) SO\textsubscript{x} emissions from the sodium silicate melting & regenerating furnace (EP3) are from both fuel combustion and processing in the furnace. Requirements governing fuel usage were the only requirements included as permit conditions for this rule for those emission units.

4) 10 CSR 10-6.400, Restriction of Emission of Particulate Matter From Industrial Processes
10 CSR 10-6.400 limits the amount of particulate matter that is allowed from an emission unit, and is dependent on the process weight rate material processed. The emission units to which this rule applies are listed below. The following calculations provide the allowable particulate emission rate based on 10 CSR 10-6.400 and the potential (maximum) emission rate including particulate emission control equipment. Process information and data used in these calculations are from the P70 Operating Permit Renewal Application, 2011 EIQ, and AP-42 and FIRE factors.
Also, one of the following equations from 10 CSR 10-6.400 is used to calculate the PM allowable limit:

\[ E = 4.10P^{0.67} \] for process weight rates up to 30 tons (60,000 lbs) per hour, and
\[ E = 55.0P^{0.11} - 40 \] for process weight rates greater than 30 tons (60,000 lbs) per hour

Where: \( E \) = rate of emission in lb/hr; and
\( P \) = process weight rate in tons/hr (maximum hourly design rate)
<table>
<thead>
<tr>
<th>Emission Unit #</th>
<th>PM Control Device &amp; Efficiency</th>
<th>Maximum Design Rate</th>
<th>PM Emission Factor</th>
<th>PM Uncontrolled Emissions</th>
<th>Fugitive Emissions</th>
<th>PM Controlled Emissions</th>
<th>PM Allowable Emission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP1</td>
<td>Fabric Filter with 99% control efficiency and 100% capture efficiency</td>
<td>33.20 tons/hr</td>
<td>0.20 lb/ton</td>
<td>6.64 lb/hr</td>
<td>—</td>
<td>0.07 lb/hr</td>
<td>40.85 lb/hr</td>
</tr>
<tr>
<td>EP2</td>
<td>Fabric Filter with 99% control efficiency and 100% capture efficiency</td>
<td>8.30 tons/hr</td>
<td>0.029 lb/ton</td>
<td>20.84 lb/hr</td>
<td>—</td>
<td>0.00 lb/hr</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>EP3</td>
<td>None</td>
<td>8.30 tons/hr</td>
<td>2 lb/ton</td>
<td>16.60 lb/hr</td>
<td>—</td>
<td>16.60 lb/hr</td>
<td>16.93 lb/hr</td>
</tr>
<tr>
<td>EP4</td>
<td>Venturi Scrubber with 90% control efficiency and 100% capture efficiency</td>
<td>8.30 tons/hr</td>
<td>0.5 lb/ton</td>
<td>4.15 lb/hr</td>
<td>—</td>
<td>0.42 lb/hr</td>
<td>16.93 lb/hr</td>
</tr>
<tr>
<td>EP5</td>
<td>Spray Tower with 47.1% control efficiency and 100% capture efficiency</td>
<td>33.20 tons/hr</td>
<td>0.25 lb/ton</td>
<td>8.30 lb/hr</td>
<td>—</td>
<td>4.39 lb/hr</td>
<td>40.85 lb/hr</td>
</tr>
<tr>
<td>EP7</td>
<td>None Fugitive Source</td>
<td>25.00 tons/hr</td>
<td>0.61 lb/ton</td>
<td>15.25 lb/hr</td>
<td>—</td>
<td>Not Applicable</td>
<td></td>
</tr>
<tr>
<td>EP102&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Fabric Filter with 99.14% control efficiency and 100% capture efficiency</td>
<td>0.86 tons/hr</td>
<td>261 lb/ton</td>
<td>224.46 lb/hr</td>
<td>—</td>
<td>1.93 lb/hr</td>
<td>3.71 lb/hr</td>
</tr>
<tr>
<td>EP103&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Fabric Filter with 99.14% control efficiency and 100% capture efficiency</td>
<td>0.86 tons/hr</td>
<td>6 lb/ton</td>
<td>5.16 lb/hr</td>
<td>—</td>
<td>0.04 lb/hr</td>
<td>3.71 lb/hr</td>
</tr>
<tr>
<td>EP104</td>
<td>Fabric Filter with 99.14% control efficiency and 100% capture efficiency</td>
<td>0.86 tons/hr</td>
<td>44.6 lb/ton</td>
<td>38.36 lb/hr</td>
<td>—</td>
<td>0.25 lb/hr</td>
<td>3.71 lb/hr</td>
</tr>
</tbody>
</table>

<sup>5</sup> EP102 – Subject to CAM
<sup>6</sup> The fabric filter is inherent part of the process
a) At maximum design rates, the uncontrolled potential PM emission rates for EP1, EP2, EP3, EP4, EP5 and EP104 are less than their corresponding allowable PM emission limits. No monitoring, recordkeeping or reporting is required for these units.

b) The PM emissions from EP103 are controlled by baghouses. The permittee is required to monitor the corresponding emission control equipment and adhere to recordkeeping and reporting requirements because the uncontrolled potential emissions are much larger than the corresponding limit. In case of the control equipment failing the installation would very likely emit far in excess of the limit. Periodic monitoring of the equipment will assure its proper working conditions.

c) As stated in the CAM applicability section of the Statement of Basis, the baghouse associated with this emission unit is inherent to the operation of the material transfer processes and provide for product recovery. PM Emissions are less than the allowable and therefore no monitoring of the baghouse is required.

d) Batch Handling System – EP2

This material handling system is a closed system that utilizes compressed air to transport the batch from the tanks to a hopper above the furnace. Although the handling system does utilize six bag vents, all of these devices vent inside the silicate building.

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons:

1. The specific pollutant regulated by that rule is not emitted by the installation;
2. The installation is not in the source category regulated by that rule;
3. The installation is not in the county or specific area that is regulated under the authority of that rule;
4. The installation does not contain the type of emission unit which is regulated by that rule;
5. The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the APCP's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).
Response to Public Comments

The draft P70 Operating Permit, Project 2017-03-038, for PQ Corporation (510-0809) was placed on public notice as of October 20, 2017, for a 30-day comment period. The public notice was published on the Department of Natural Resources' Air Pollution Control Program's web page at: http://dnr.mo.gov/env/apcp/permit-public-notices.htm. on Friday, October 20, 2017. On November 8, 2017, the Air Pollution Control Program received comments from Leslye E. Werner, Air Permitting and Compliance Branch Acting Chief, Air Permitting and Compliance Branch Chief for EPA Region VII. The comments are addressed in the order in which they appear within the letter.

Comment #1: Permit Condition EP102-001 and Permit Condition EP103-001 Incorporate Requirements established in City of St. Louis Air Pollution Control Program Construction Permit #10-10-019 effective April 28, 2011, that are applicable to the Silica Gel Production Mill and Mill Furnace (EP102) and Product Bagging Unit (EP103). Construction Permit 10-10-109 established emission limits for PM$_{10}$ and PM$_{2.5}$ and requires the permittee to operate, calibrate, and maintain emission control devices and monitoring instrumentation. Construction Permit 10-10-109 also required the permittee to conduct a performance test, “within 180 days after achieving consistent operation at the maximum production rate at which the heater, gel mill production and packaging units will be operated, but not later than 270 days after initial startup of the modified emission units, and at other times as may be required by SLAPCP,” to determine the PM$_{10}$ and PM$_{2.5}$ concentrations in the exhaust gas from the control device. It would appear that the initial one-time performance test may have been conducted in 2011 or 2012 and EPA believes a one-time performance test that establishes operating parameters for a control device to maintain emission limits may be insufficient. Therefore, EPA encourages MDNR consider utilizing the authority provided in 10 CSR 10-6.065(6)(C)(1)(b) and suggests including performance verification retests at least once during the term of each operating permit.

Response to Comment: Consideration of several factors, such as the size of the applicable emission unit, the time elapsed since last performance test, the margin of compliance achieved in that test, the condition of control equipment, and the availability and results of associated monitoring data reflect that regular performance testing of EP-102 and EP-103 is unnecessary. EP102 is equipped with a Micropul Baghouse #288-12-100-TRH and EP103 is also equipped with a Mikropul Baghouse #164s-b-20. In addition, Micropul Baghouse #288-12-100-TRH and Mikropul Baghouse #164s-b-20 were installed in 2011, and are only at approximately 10% of their anticipated life expectancy. Further, according to PQ preventive maintenance records have not indicated any deterioration to the baghouses, demonstrating good condition of the dust collector. Fabric filters used are also replaced per manufacturer's instruction and thus are maintained in good condition. The results of the performance test conducted in 2012 recorded PM$_{10}$ and PM$_{2.5}$ emissions at less than 10% of the applicable emissions limits, and show that EP-102 and EP-103 are therefore not significant contributors of PM$_{10}$ or PM$_{2.5}$. Finally, PQ maintains years of daily visible emission monitoring and pressure drop readings which document good operating conditions of the control devices and demonstrate ongoing compliance with emissions limits. Based on each of these considerations, the Air Pollution Control Program believes it is not yet necessary for MDNR to request PQ to conduct regular performance testing to ensure compliance with emission limits for EP-102 and EP-103.

Comment #2: Permit Condition EP102-002 incorporates the requirements of Compliance Assurance Monitoring (CAM) plan, applicable to the Silica Gel Mill (EP102) stack gas control device. Currently,
the Silica Gel Mill control device is a baghouse and is being monitored by pressure drop indicators with
daily monitoring. EPA believes that pressure drop monitoring may not be an effective PM control
parameter for baghouses and suggests that either PM CEMS or a bag leak detector are more appropriate
measurement option for baghouses. EPA suggests MDNR consider working with PQ Corporation and
move toward a bag leak detection system, in lieu of pressure drop, on the Silica Gel Mill baghouse.

Response to Comment: For baghouse at the Silica Gel Mill (EP102), the current requirements
of pressure drop monitoring and daily visible emissions monitoring are sufficient to indicate
proper performance of the baghouses and demonstrate compliance with the applicable PM
limits. The permissible pressure drop range established in the permit is based off of past
performance testing, which has shown compliance with the PM limits by a very wide margin.
Opacity is a primary indicator of holes, tears, or other events reflecting compromised baghouse
performance, and pressure drop also indicates insufficient cleaning cycles or possible blinding
of bags. It should be noted that example CAM plans contained in the current CAM Technical
Guidance Document for fabric filters similarly consist of visible emissions and pressure drop
monitoring as primary performance indicators of baghouses. Based on these considerations, PQ
does not think that installation of a PM CEMS or alternative bag leak monitoring system is
necessary to ensure baghouse performance in this case, but may reconsider in the event future
performance testing within the permitted pressure drop range indicates exceedance of the PM
limits.

Comment #3: Permit Condition EP3-002 and Permit Condition EP6-001 incorporate the requirements
from 10 CSR 10-6.260 - Restriction of Emissions of Sulfur Compounds. Permit Condition EP3-003 and
Permit Condition EP6-002 incorporate the requirements from 10 CSR 10-6.261 - Control of Sulfur
Dioxide Emissions. All four of these permit conditions reference footnote 1, on page 8, which says:
"10 CSR 10-6.260 was rescinded on November 30, 2015 and replaced by 10 CSR 10-6.261;
however, the provisions of 10 CSR 10-6.260 currently remain in State Implementation Plan and
are federally enforceable (emphasis added). The provisions of 10 CSR 10-6.260 will expire and
the provisions of 10 CSR 10-6.261 will become federally enforceable (emphasis added) once 10
CSR 10-6.261 is incorporated into the federally-approved SIP as a final EPA action."
EPA enforces all permit conditions, excluding State Only requirements and Local Only
Requirements, incorporated into an issued active operating permit and therefore it is suggested MDNR
consider a slight wording modification to footnote 1. EPA suggests a more appropriate footnote would
say:
"10 CSR 10-6.260 was rescinded on November 30, 2015 and replaced by 10 CSR 10-6.261;
however, the provisions of 10 CSR 10-6.260 currently remain in State Implementation Plan. The
provisions of 10 CSR 10-6.260 will expire, once 10 CSR 10-6.261 is incorporated into the
federally-approved SIP as a final EPA action."

EPA also suggests MDNR consider this same wording modification be incorporated into item 3) of the
Other Regulatory Determinations section of the Statement of Basis.

Response to Comment: The suggested language is incorporated into the footnote and the
Statement of Basis.

Comment #4: Section IV: Core Permit Requirements includes 10 CSR 10-6.250: Asbestos Abatement
Projects-Certification, Accreditation, and Business Exemption Requirements incorporating the Asbestos
Hazard Emergency Response Act (AHERA) and its regulations for school districts and personnel
working on asbestos activities in schools. The requirements associated with 10 CSR 10-6.250 have not
been adopted into the EPA approved Missouri State Implementation Plan (SIP) and is therefore a "State Only Requirement," and EPA recommends MDNR consider adding a "State Only Requirement" designation to 10 CSR 10-6.250.

**Response to Comment:** The draft permit has been revised as requested.
JUN 05 2018

Mr. Stan Slusser
PQ Corporation
4238 Geraldine Avenue
St. Louis, MO 63115

Re: Part 70 Operating Permit Renewal
Installation ID: 510-0809, Permit Number: OP2018-050

Dear Mr. Slusser:

Enclosed with this letter is your Part 70 operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

This permit may include requirements with which you may not be familiar. If you would like the Department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at http://dnr.mo.gov/regions/. The online CAV request can be found at http://dnr.mo.gov/cav/compliance.htm.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty 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 have any questions or need additional information regarding this permit, please do not hesitate to contact Berhanu Getahun at the St. Louis Regional Office, 7545 S. Lindbergh, Suite 210, St. Louis, MO 63125, or by telephone at (314) 416-2960. You may also contact me with the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS:bgj

Enclosures

c: PAMS File: 2017-03-038