



INTERMEDIATE STATE 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.

Intermediate Operating Permit Number: OP2016-021
Expiration Date: JUN 29 2021
Installation ID: 065-0002 & 065-0038
Project Number: 2014-02-010

Installation Name and Address

Royal Oak Enterprises - Salem Plant
673 Hwy JJ
Salem, MO 65560-3439
Dent County

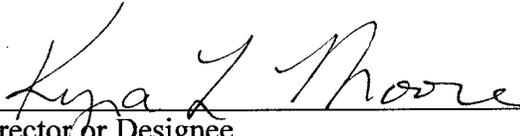
Parent Company's Name and Address

Royal Oak Enterprises, LLC
1 Royal Oak Avenue
Roswell, GA 30076

Installation Description:

There are two Royal Oak installations at this location: charcoal production kilns and a briquet plant. The kilns use pyrolysis to drive volatile compounds out of wood feedstock. The charred wood is then pulverized and blended with other raw materials, and pressed to produce charcoal briquets. The installation is a synthetic minor source of PM₁₀ and NO_x located in an attainment area for all criteria pollutants.


Prepared by:
Bern Johnson
Operating Permit Unit


Director or Designee
Department of Natural Resources

JUN 29 2016

Effective Date

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I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

The Royal Oak installation in Salem consists of two parts: ten charcoal kilns and a briquet plant.

This installation has two federal facility IDs and two permits. The charcoal kilns have an ID of 065-0002 and have a current Basic Operating permit. The briquet plant has an ID of 065-0038 and an Intermediate Operating permit. This arrangement is useful for calculating emission fees since charcoal kilns are exempted from fees by 10 CSR 10-6.110(3)(A). The installation will retain these two IDs for this purpose, but the two Operating permits will be combined in this document.

Charcoal Kilns – 065-0002

Charcoal is formed through the pyrolysis of carbon containing materials. The most commonly used materials are woods, such as hickory and oak. During the manufacturing process, the wood is heated, driving off water and highly volatile organic compounds (VOCs). Wood temperature rises to approximately 275°C (527°F), and the VOC distillate yield increases. The pyrolysis stage takes three-and-a-half to five days to complete. This is followed by a cooling period, which can last up to six days.

Briquet Plant – 065-0038

Charcoal briquets are made from ground charcoal mixed and bound with cornstarch, which is then formed into briquets. This process produces briquets of consistent size, shape, and a predictable burning time, all of which are necessary for a quality product. After the mix is pressed into briquets, it is carried by a conveyor through a single pass dryer, where the moisture content is reduced to about 5%. Either green sawdust or propane is used as a fuel for briquet drying. The green sawdust must also be dried before combustion. The heat for drying the sawdust comes from a burner that also combusts a portion of the dried sawdust.

Reported Air Pollutant Emissions, tons per year combined emissions from 065-0002 and 065-0038					
Pollutants	2013	2012	2011	2010	2009
Particulate Matter ≤ Ten Microns (PM ₁₀)	86.30	86.30	86.28	87.88	50.40
Particulate Matter ≤ 2.5 Microns (PM _{2.5})	48.85*	48.85*	31.98	28.49	19.21
Sulfur Oxides (SO _x)	2.36	2.36	2.36	2.16	1.44
Nitrogen Oxides (NO _x)	60.18	60.18	60.18	45.56	45.56
Volatile Organic Compounds(VOC)	5.31	5.31	5.31	4.87	6.34
Carbon Monoxide (CO)	57.48	57.48	57.48	52.73	37.26
Lead (Pb)	0.01	0.01	0.01	0.01	0.01

Reported Air Pollutant Emissions, tons per year combined emissions from 065-0002 and 065-0038					
Pollutants	2013	2012	2011	2010	2009
Hazardous Air Pollutants (HAPs)	1.90	1.90	1.90	1.74	1.39
Ammonia (NH ₃)	0	0	0	0	0

*-PM2.5 emission reporting was changed for the 2012 questionnaire. This value does not represent an actual increase in PM2.5 emissions over previous years.

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations.

Briquet Plant 065-0038	
2013 EIQ Emission Point #	Description
EP04	Load Raw Charcoal Hopper
EP06	Load Coal/Coke Hopper
EP07	Transfer Mixture To Hammermill, Conveyor #1
EP08	Hammermill Crusher
EP09	Lime Transfer - Lime Hopper
	Lime Transfer - Conveyor #2
	Lime Transfer - Conveyor #3
EP10	Transfer Material Mixture - Bucket Elevator
	Transfer Material Mixture - Screw Conveyor
	Transfer Material Mixture - Holding Hopper
EP12	Transfer Mixture - Line #1, Conveyor #5
	Transfer Mixture - Line #1, Conveyor #6
EP15	Transfer Wet Briquet - Conv 7
	Transfer Wet Briquet - Conv 8
	Transfer Wet Briquet - Conv 21
EP18B	Cooler #1 - Process Emissions
EP18C	Briquet Dryer Line #1 – Aeroglide – Process Emissions
EP19	Transfer Mixture To Mixer #1 or #2, Conveyor #11 or #12
EP20	Load Materials Mixer #1 or #2
EP21	Transfer Wet Material - Conveyor #13
	Transfer Wet Material - Conveyor #14
	Transfer Wet Material - Conveyor #15
	Transfer Wet Material - Conveyor #16
EP24A	Briquet Dryer Line #2 - Sawdust Combustion Emissions

EP24B	Briquet Dryer Line #2 - Process Emissions
EP24D	Cooler #2 – Process Emissions
EP25	Conveying/Handling Of Briquets - Conveyor #9
	Conveying/Handling Of Briquets - Conveyor #18
	Conveying/Handling Of Briquets - Conveyor #17
	Conveying/Handling Of Briquets - Conveyor #20
	Bagging - Charcoal Briquets
	Conveying/Handling Of Briquets - Briquet Silo Loadout
EP32	Briquet Roll Press
	Briquet Roll Press
EP33	Corn Starch Receiving Silo
EP35	300 Gallon Gasoline Storage Tank
EP37	Load Sawdust Hopper
EP38	Belt Conveyor – segment 1
	Belt Conveyor – segment 2
EP39	Hammermill
EP40	Pneumatic Transfer To Silo
EP41	Silo Loadout
EP42	Screw Conveyor
EP43	Cylcone Separator
EP44	Conveyor
EP45	Fuel Storage Bin
EP46	Webb Burner
Charcoal Kilns 065-0002	
2013 EIQ Emission Point #	Description
EP-02	Unload Kilns
EP-03	Raw Charcoal storage
EP-04	Haul Road – Wood Slabs
EP-05	Charcoal kilns (#7-16)
EP-06	Haul Road – Charcoal Shipping

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance.

Briquet Plant 065-0038	
2013 EIQ Emission Point #	Description
EP01	Raw Charcoal Storage
EP02	Sawdust Storage Pile

EP03	Anthracite Coal & Coke Storage
EP05	Load Sawdust Hopper
EP11	Convey Captured Fines From Cyclone - Conveyor #4
EP13	Load Starch Mixing Tank
EP14	Load Materials Mixer #3
EP16	Briquet Screening - Fines
EP17	Transfer Fines - Bucket Elevator
EP18A	Briquet Dryer Line #1 - Aeroglide - Propane Combustion
EP22	Briquet Screening - Fines
EP23	Transfer Fines - Bucket Elevator
EP24C	Briquet Dryer Line #2 - Propane Combustion Emissions
EP26	Boiler - Superior #6971 - 1 MMBtu LPG Starch Tanks Heater (1974)
EP27	Boiler - Ajax #77-29646 - 0.84 MMBtu Fuel Oil Water Tower Heater (1984)
EP34	Dip Tank
EP36	Haul Road
EP47	Haul Road
	20,000 Gallon Lighter Fluid (Mineral Spirits) Tank
	1,150 Gallon Waste Oil Tank
	15,000 Gallon Fuel Oil Tank
	1,500 Gallon Fuel Oil 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 on the date of permit issuance. 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 or Emission Units without Limitations.

PERMIT CONDITION PW001

10 CSR 10-6.065(5)(C)2. Voluntary Limitation(s)

Emission Limitation:

- 1) The permittee shall emit less than 100 tons of particulate matter less than or equal to ten microns in diameter (PM₁₀) per consecutive 12-month period from the entire installation.
- 2) The permittee shall emit less than 100 tons of nitrogen oxides (NO_x) per consecutive 12-month period from the entire installation.

Monitoring/Recordkeeping:

- 1) The permittee shall calculate and record emissions of PM₁₀.
- 2) The permittee shall use Attachments E, F, and G, or their equivalents, to demonstrate compliance with the PM₁₀ limitations.
- 3) The permittee shall keep monthly records to determine NO_x emissions from these emission units and associated control systems. The permittee shall calculate NO_x emissions over rolling 12-month periods. The permittee shall use Attachment H, or its equivalent, for this calculation.
- 4) Records may be kept electronically or in paper form.
- 5) The permittee shall maintain all records required by this permit for not less than five years and shall make such records available to any Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.

Reporting:

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the permittee determines that the emission unit(s) exceeded the emission limitation listed above.
- 2) Reports of any deviations from monitoring, other than the recordkeeping and reporting requirements of this permit condition, shall be submitted in the annual compliance certification, as required by Section V of this permit.

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 on the date of permit issuance.

PERMIT CONDITION 1		
10 CSR 10-6.060 Construction Permits Required		
Construction Permit No. 122015-007, Issued December 7, 2015		
Charcoal Kilns 065-0002		
Emission Unit	Emission Unit	Manufacturer and Model
EP-05	Charcoal kilns (#7-16)	custom

Operational Limitation:

- 1) The permittee shall not simultaneously operate more than four (4) kilns during the burn cycle from these emission units [Special Condition No. 1A].
- 2) The permittee shall control emissions from these charcoal kilns using an afterburner (AB-2). The afterburner shall be operated and maintained in accordance with the manufacturer's specifications [Special Condition No. 2A].
- 3) The permittee shall ensure that the temperature of the afterburner (AB-2) is maintained within the normal operating range. A minimum temperature of 1430°F must be maintained to ensure continued compliance [Special Condition No. 2C].
- 4) The permittee shall fuel afterburner AB-2 with propane exclusively [Special Condition No. 3].

Monitoring/Recordkeeping:

- 1) The permittee shall maintain a daily log for each charcoal kiln that includes start-up time, cool-down time, and re-light time to demonstrate compliance with operation limit 1 [Special Condition No. 1B].
- 2) The permittee shall continuously monitor and record the temperature of the afterburner (AB-2) any time the charcoal kilns are in operation [Special Condition No. 2B].
- 3) The permittee shall maintain an operating and maintenance log (Attachment D or equivalent) for the afterburner AB-2 (CD2) which shall include the following [Special Condition No. 2E]:
 - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- 4) The permittee shall maintain all records for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request .
- 5) Records may be kept electronically or in paper form.

Reporting:

- 1) The permittee shall report any deviations from the emission limitation, monitoring/recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 2		
10 CSR 10-6.060 Construction Permits Required Construction Permit No. 122009-012, Issued December 18, 2009		
Briquet Plant 065-0038		
Emission Unit	Description	Manufacturer & Model
EP38	Belt Conveyor segment 1 – installed 2001	custom
	Belt Conveyor segment 2 – installed 2001	
EP39	Hammermill – installed 2001	custom
EP40	Pneumatic Transfer To Silo – installed 2001	custom
EP43	Cyclone Separator – installed 2009	custom
EP44	Conveyor – installed 2009	custom
EP45	Fuel Storage Bin – installed 2009	Webb
EP46	Webb Burner	

Emission Limitation:

- 1) The permittee shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from these emission units [Special Condition No. 2.A]

Operational Limitation:

- 1) The permittee shall control the emissions from belt conveyor (EP38), hammermill (EP39) and pneumatic transfer to silo (EP40) using fabric filters as specified in the construction permit application. The fabric filters shall be operated and maintained in accordance with the manufacturer’s specifications. The fabric filter shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources’ employees may easily observe them. Replacement filters for the fabric filters shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating condition expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance) [Special Condition No. 4.A].
- 2) The permittee shall ensure that the cyclone control device is in use at all times when the sawdust dryer with cyclone separator (EP43), fuel storage bin (EP45) and Webb burner (EP46) are in operation. The cyclone shall be operated and maintained in accordance with the manufacturer’s specifications. The cyclone shall be equipped with a gauge or meter, which indicates the pressure drop across the control device [Special Condition No. 3.A:].

Monitoring/Recordkeeping:

- 1) The permittee shall maintain an accurate record of PM₁₀ emitted into the atmosphere from the equipment listed above. Attachment E or an equivalent form generated by the permittee shall be used for this purpose. The permittee shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources’ personnel upon request [Special Condition No. 2.B].
- 2) Special Condition No. 3.B: The permittee shall maintain an operating and maintenance log (see Attachment D or an equivalent form generated by the permittee) for each of the cyclones which shall include the following:
 - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and

- b) Maintenance activities, with inspection schedule, repair actions, and replacement, etc.
- 3) The permittee shall monitor and record the operating pressure drop across the fabric filters at least once every 24 hours using Attachment K or equivalent. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer’s performance warranty [Special Condition No. 4.B].
- 4) The permittee shall maintain an operating and maintenance log (see Attachment D or an equivalent form generated by the permittee) for the fabric filters which shall include the following [Special Condition No. 4.C]:
 - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacement, etc.
- 5) The permittee shall maintain all records for five years. They may be kept electronically or in paper form. They shall be made available immediately for inspection to Department of Natural Resources’ personnel upon request.

Reporting:

- 1) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which records indicate that the source has exceeded the emission limit listed above.
- 2) The permittee shall report any deviations from the emission limitation, monitoring/recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 3		
10 CSR 10-6.075 Maximum Achievable Control Technology Regulations 40 CFR 63 Subpart CCCCC Gasoline Dispensing Facilities		
Briquet Plant 065-0038		
Emission Unit	Description	Capacity
EP-35	Gasoline Storage Tank	300 gallons

Operational Limitation:

- 1) The permittee shall adhere to the following requirements from 40 CFR 63.11116:
 - a) The permittee must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:
 - i) Minimize gasoline spills [§63.11116(a)(1)];
 - ii) Clean up spills as expeditiously as practicable [§63.11116(a)(2)];
 - iii) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use [§63.11116(a)(3)];
 - iv) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators [§63.11116(a)(4)].
 - b) The permittee is not required to submit notifications or reports as specified in §63.11125, §63.11126, or subpart A of this part, but must have records available within 24 hours of a request by the Administrator to document gasoline throughput [§63.11116(b)].

- c) Portable gasoline containers that meet the requirements of 40 CFR part 59, subpart F, are considered acceptable for compliance with operational limit 1.(a)(3) [§63.11116(d)].

Monitoring:

- 1) None-See Statement of Basis.

Recordkeeping:

- 1) The permittee shall maintain records to document monthly throughput. Records of fuel purchases will satisfy this requirement [§63.11111(e)].

Reporting:

- 1) The permittee shall report to the Air Permitting and Compliance Branch, U.S. EPA Region VII, 11201 Renner Boulevard, Lenexa, KS, 66219; and to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the permittee determines that the emission unit(s) exceeded the operational limitation listed above.
- 2) The permittee shall report any deviations from the operational limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report required by Section V of this permit.

PERMIT CONDITION 4		
10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants		
Sources Installed Before February 24, 1971		
Briquet Plant 065-0038		
Emission Unit	Description	Manufacturer & Model
EP24B	Briquet Dryer Line #2 - Cooler #2 - Process Emissions – installed 1960	Industrial Combustion

Emission Limitation:

- 1) The permittee shall not cause or permit emissions to be discharged into the atmosphere from these sources any visible emissions with an opacity greater than 40% percent.
- 2) Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six minutes in any sixty minutes air contaminants with an opacity up to sixty percent.

Monitoring:

- 1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in USEPA Test Method 22. The permittee is only required to take readings 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) The permittee shall conduct weekly observations for a minimum of eight consecutive weeks after permit issuance.

- b) Should the permittee observe no violations of this regulation during this period then-
 - i) The permittee may observe once every two weeks for a period of eight weeks.
 - ii) If a violation is noted, monitoring reverts to weekly.
 - iii) Should no violation of this regulation be observed during this period then-
 - (1) The permittee may observe once per month.
 - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

- 1) The permittee shall maintain records of all observation results using Attachment B (or its equivalent), noting:
 - a) Whether any air emissions (except for water vapor) were visible from the emission units;
 - b) All emission units from which visible emissions occurred;
 - c) Whether the visible emissions were normal for the process;
 - d) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
 - e) The permittee shall maintain records of all USEPA Method 9 opacity tests performed.

Reporting:

- 1) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the permittee has determined using the Method 9 test that the emission unit(s) exceed the opacity limit.
- 2) The permittee shall report any deviations from the emission limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 5		
10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants		
Sources Installed After February 24, 1971		
Briquet Plant 065-0038		
Emission Unit	Description	Manufacturer & Model
EP04	Load Raw Charcoal Hopper	custom
EP06	Load Coal/Coke Hopper	custom
EP07	Transfer Mixture To Hammermill, Conveyor #1	custom
EP08	Hammermill Crusher – installed 1973	Jeffery
EP09	Lime Transfer - Lime Hopper	custom
	Lime Transfer - Conveyor #2	
	Lime Transfer - Conveyor #3	
EP10	Transfer Material Mixture - Bucket Elevator	Link Belt
	Transfer Material Mixture - Screw Conveyor	custom

Emission Unit	Description	Manufacturer & Model
	Transfer Material Mixture - Holding Hopper	custom
EP12	Transfer Mixture - Line #1, Conveyor #5	custom
	Transfer Mixture - Line #1, Conveyor #6	
EP15	Transfer Wet Material - Conveyors #7, #8, and #21 – installed 1981	custom
EP18B	Cooler #1 Briquet - Process Emissions – installed 1981	Aeroglide
EP19	Transfer To Mixer #1 or #2, Conveyor #11 or #12	custom
EP21	Transfer Wet Material - Conveyors #13, #14, #15, & #16	custom
EP20	Load Materials Mixer #1 or #2	Aeroglide
EP24A	Briquet Dryer Line #2 - Sawdust Combustion Emissions – installed 2001	Webb Burners
EP25	Conveying/Handling Of Briquets - Conveyor #9 – installed 1976	Marco
	Conveying/Handling Of Briquets - Conveyor #18 – installed 1976	Marco
	Conveying/Handling Of Briquets - Conveyor #17 – installed 1976	Marco
	Conveying/Handling Of Briquets - Conveyor #20 – installed 1976	Marco
	Bagging - Charcoal Briquets – installed 1976	Marco
	Conveying/Handling Of Briquets - Briquet Silo Loadout – installed 1976	custom
EP32	Briquet Roll Press – installed 1981	Webb
	Briquet Roll Press	
EP33	Corn Starch Receiving Silo	
EP37	Load Sawdust Hopper – installed 2001	custom
EP43	Cyclone Separator – installed 2009	
EP44	Conveyor – installed 2009	
EP45	Fuel Storage Bin – installed 2009	
EP46	Webb Burner – installed 2009	Webb

Emission Limitation:

- 1) The permittee shall not cause or permit emissions to be discharged into the atmosphere from these sources any visible emissions with an opacity greater than 20% percent.
- 2) Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six minutes in any sixty minutes air contaminants with an opacity up to sixty percent.

Monitoring:

- 1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in USEPA Test Method 22. The permittee is only required to take readings 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:
 - b) The permittee shall conduct weekly observations for a minimum of eight consecutive weeks after permit issuance.
 - c) Should the permittee observe no violations of this regulation during this period then-
 - i) The permittee may observe once every two weeks for a period of eight weeks.
 - ii) If a violation is noted, monitoring reverts to weekly.
 - iii) Should no violation of this regulation be observed during this period then-
 - (1) The permittee may observe once per month.
 - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

- 1) The permittee shall maintain records of all observation results using Attachment B (or its equivalent), noting:
 - a) Whether any air emissions (except for water vapor) were visible from the emission units;
 - b) All emission units from which visible emissions occurred;
 - c) Whether the visible emissions were normal for the process;
 - d) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
 - e) The permittee shall maintain records of all USEPA Method 9 opacity tests performed.

Reporting:

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the permittee has determined using the Method 9 test that the emission unit(s) exceed the opacity limit.
- 2) The permittee shall report any deviations from the emission limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 6		
10 CSR 10-6.330(3)(A)1. and (3)(A)3.		
Restriction of Emission from Batch-Type Charcoal Kilns		
Charcoal Kilns 065-0002		
Emission Unit	Description	Manufacturer/Model #
EP-05	Charcoal kilns (#7-16)	custom

Emission Limitation:

- 1) The permittee shall not cause or permit emissions to be discharged into the atmosphere from these sources any visible emissions with an opacity greater than 10% percent [10 CSR 10-6.330(3)(A)(1)].
- 2) The permittee shall maintain charcoal kiln control systems to assure that no visible fugitive emissions result from equipment cracks or door seals.

Monitoring:

- 1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in USEPA Test Method 22. The permittee is only required to take readings 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) The permittee shall conduct weekly observations for a minimum of eight consecutive weeks after permit issuance.
 - b) Should the permittee observe no violations of this regulation during this period then-
 - i) The permittee may observe once every two weeks for a period of eight weeks.
 - ii) If a violation is noted, monitoring reverts to weekly.
 - iii) Should no violation of this regulation be observed during this period then-
 - (1) The permittee may observe once per month.
 - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

- 1) The permittee shall maintain records of all observation results using Attachment B (or its equivalent), noting:
 - a) Whether any air emissions (except for water vapor) were visible from the emission units;
 - b) All emission units from which visible emissions occurred;
 - c) Whether the visible emissions were normal for the process;
 - d) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
 - e) The permittee shall maintain records of all USEPA Method 9 opacity tests performed.

Reporting:

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the permittee has determined using the Method 9 test that the emission unit(s) exceed the opacity limit.
- 2) The permittee shall report any deviations from the emission limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 7		
10 CSR 10-6.330(3)(A)2 Restriction of Emission from Batch-Type Charcoal Kilns		
Charcoal Kilns 065-0002		
Emission Unit	Description	Manufacturer/Model #
EP-05	Charcoal kilns (#7-16)	custom

Emission Limitation:

- 1) The permittee shall not emit more than 1.5 pounds per hour of particulate matter from the charcoal kiln control system.
- 2) The permittee shall not emit more than either 0.24 lbs./hr volatile organic compounds (VOC) from the charcoal kiln control device.
- 3) The permittee shall not emit more than 1.75 lbs./hr of carbon monoxide (CO) from the charcoal kiln control device.

Monitoring:

- 1) None-See Statement of Basis.

Record Keeping/Reporting:

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which the permittee has determined that the emission unit(s) exceeded the emission limitation listed above.
- 2) The permittee shall report any deviations from the emission limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 8		
10 CSR 10-6.330(3)(B)(8), (3)(D), and (3)(E) Restriction of Emission from Batch-Type Charcoal Kilns		
Charcoal Kilns 065-0002		
Emission Unit	Description	Manufacturer/Model #
EP-05	Charcoal kilns (#7-16)	custom

Operational Limitation:

- 1) The permittee shall not operate the charcoal kilns listed or their required control systems unless it has department-approved Standard Operating Procedures (SOP) and Maintenance Practices (MP) manuals.

Monitoring/Record Keeping:

- 1) The permittee shall develop, submit for department approval and establish an SOP manual. At a minimum, this manual shall describe:
 - a) Safe charcoal kiln operation
 - b) Bundle stacking (including adequate platform of logs to enhance combustion);
 - c) Use of properly seasoned wood (cover mixing of wood species, if applicable);
 - d) Control of fugitive emissions from each charcoal kiln (e.g. “mudding” cracks and doors) and each emission control device; and
 - e) Methods of reporting and recordkeeping required by section (4) of this rule.
- 2) The permittee shall develop, submit for department approval and establish an MP manual. This manual shall be maintained at each site for the specific emission control device(s) installed at the site. At a minimum, this manual shall include:
 - a) Maintenance of all equipment (e.g. proper cleaning of inlet ports);
 - b) Measures taken in the event of emission control device failure to minimize emissions (e.g. opening kiln caps and air vents to allow kiln wood to burn down to minimize smoking conditions or shutting all kiln inlets and outlets until all combustion in the chamber is extinguished);
 - c) Inspections performed and frequency (e.g. daily burner operation); and
 - d) Methods of reporting and recordkeeping required by section (4) of this rule.

Reporting:

- 1) The permittee shall report any deviations from the emission limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION 9		
10 CSR 10-6.330(3)(B), (3)(C), and (4) Restriction of Emission from Batch-Type Charcoal Kilns		
Charcoal Kilns 065-0002		
Emission Unit	Description	Manufacturer/Model #
EP-05	Charcoal kilns (#7-16)	custom

Operational Limitation:

- 1) The permittee shall not operate the charcoal kilns listed without an emission control device installed and operated to meet the requirements of 10 CSR 10-6.330 [10 CSR 10-6.330(3)(B)(1)].

- 2) Each emission control device shall have a sight glass installed in the burning chamber such that the burn can be visually monitored [10 CSR 10-6.330(3)(B)(2)].
- 3) All charcoal kiln emissions shall be ducted to an operating emission control device throughout the entire burn cycle [10 CSR 10-6.330(3)(B)(3)].
- 4) Emission control devices shall be equipped with automatic temperature control systems which are set such that gas streams are heated and maintained at a nominal operating temperature of 1600 degrees F, with a 1430 degree F minimum temperature allowed, for a minimum residence time of 1.7 seconds [10 CSR 10-6.330(3)(B)(4) & (3)(F)(8) – See Statement of Basis].
- 5) All charcoal kiln control systems shall be operated using the same fuel(s) as used during performance testing [10 CSR 10-6.330(3)(B)(5)].
- 6) No charcoal kiln shall burn treated wood at any time [10 CSR 10-6.330(3)(B)(6)].
- 7) All charcoal kiln control systems that have been performance tested shall continuously display and record the emission control device operating temperature with the permanently installed temperature recording device at all times of operation [10 CSR 10-6.330(3)(B)(9)].
- 8) Each charcoal kiln shall have a unique identification number permanently affixed to the exterior of the charcoal kiln structure [10 CSR 10-6.330(3)(C)].

Monitoring:

- 1) The permittee shall monitor the emission control device temperature with the continuous recording device [10 CSR 10-6.330(4)(A)(3)].
- 2) The permittee shall monitor the start-up time(s), cool-down time(s), re-light time(s) for the charcoal kiln control system [10 CSR 10-6.330(4)(A)(5)].
- 3) The permittee shall monitor the fuel type and usage.

Record Keeping:

- 1) The permittee shall maintain a file on each active charcoal kiln with the following information for a minimum of five years from the date the data is collected:
 - a) Average annual production (tons of charcoal per charcoal manufacturing installation per year divided by the number of charcoal kilns at the charcoal manufacturing installation);
 - b) Start-up time (hour and minute) for each burn cycle;
 - c) Emission control device temperature (in degrees Fahrenheit) throughout each burn cycle at a point in the emission control device where gas residence time is no less than 1.7 seconds;
 - d) The emission control device temperature shall be continuously displayed and recorded by a continuous recording device;
 - e) A daily log for each charcoal kiln control system that includes start-up time(s), cool-down time(s), re-light time(s) and inspections performed (e.g. burn chamber); (Attachment I)
 - f) A monthly log for each charcoal kiln control system that includes fuel usage and where more than one type of fuel is used, fuel types and times of usage; (Attachment J)
 - g) A malfunction log that includes a description of each malfunction cause, duration and actions taken to remedy the malfunction; and (Attachment D)
 - h) All information shall be made immediately available to Missouri Department of Natural Resources representatives upon request.

Reporting:

- 1) The permittee shall report any deviations from the emission limitation, monitoring, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

III. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), 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 on the date of permit issuance. The following is only an excerpt from the regulation or code, and is provided for summary purposes only

10 CSR 10-6.045 Open Burning Requirements

- 1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
- 2) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.

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) Best 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 list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, 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, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
- 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. [10 CSR 10-6.065(5)(B)1.A(III)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)3.B]

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

- 1) 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.
 - 1) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

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

- 1) The permittee shall submit 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) The permittee may be required by the director to file additional reports.
- 3) 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.
- 4) The permittee shall submit a full EIQ for the 2011, 2014, 2017, and 2020 reporting years. In the interim years the installation may submit a Reduced Reporting Form; however, if the installation's emissions increase or decrease by more than five tons when compared to their last submitted full EIQ, the installation shall submit a full EIQ rather than a Reduced Reporting Form.

- 5) In addition to the EIQ submittal schedule outlined above, any permit issued under 10 CSR 10-6.060 section (5) or (6) triggers a requirement that a full EIQ be submitted in the first full calendar year after the permitted equipment initially operates.
- 6) The fees shall be payable to the Department of Natural Resources and shall be accompanied by the emissions report.
- 7) The permittee shall complete required reports on state supplied EIQ forms or electronically via MoEIS. Alternate methods of reporting the emissions can be submitted for approval by the director. The reports shall be submitted to the director by April 1 after the end of each reporting year. If the full emissions report is filed electronically via MoEIS, this due date is extended to May 1.
- 8) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
- 9) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

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 not federally enforceable.

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.

10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

- 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.

Monitoring:

The permittee shall conduct inspections of its facilities sufficient to determine compliance with this regulation. If the permittee discovers a violation, the permittee shall undertake corrective action to eliminate the violation.

The permittee shall maintain the following monitoring schedule:

- 1) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
- 2) Should no violation of this regulation be observed during this period then-
 - a) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
 - b) If a violation is noted, monitoring reverts to weekly.
 - c) Should no violation of this regulation be observed during this period then-
 - i) The permittee may observe once per month.
 - ii) If a violation is noted, monitoring reverts to weekly.
- 3) If the permittee reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner to the initial monitoring frequency.

Recordkeeping:

The permittee shall document all readings on Attachment A, or its equivalent, noting the following:

- 1) Whether air emissions (except water vapor) remain visible in the ambient air beyond the property line of origin.
- 2) Whether the visible emissions were normal for the installation.
- 3) Whether equipment malfunctions contributed to an exceedance.
- 4) Any violations and any corrective actions undertaken to correct the violation.

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) No owner or other person shall cause or permit to be discharged into the atmosphere from any source any visible emissions in excess of the limits specified by this rule. This permit will contain the opacity limits identified (10, 20 or 40 percent) for the specific emission units.

Monitoring:

- 1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in USEPA Test Method 22. The permittee is only required to take readings 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) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
 - b) Should the permittee observe no violations of this regulation during this period then-
 - i) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
 - ii) If a violation is noted, monitoring reverts to weekly.
 - iii) Should no violation of this regulation be observed during this period then-
 - (1) The permittee may observe once per month.
 - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

The permittee shall maintain records of all observation results using Attachment B (or its equivalent), 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

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. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the department. Each person who offers training for asbestos abatement occupations must first obtain accreditation from

the department. Certain business entities that meet the requirements for state-approved exemption status must allow the department to monitor training classes provided to employees who perform asbestos abatement.

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 by a permittee:
 - 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";
 - 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.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

- 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 §82.106.
 - b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
 - c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
 - d) No person may modify, remove, or interfere with the required warning statement except as described in §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:
 - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.

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- b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
 - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
 - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
 - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §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 §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 as specified 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*

IV. 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, §(5)(E)2 and §(6)(C)1.B Permit Duration

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.

10 CSR 10-6.065, §(5)(C)1 and §(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, Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
 - b) The permittee shall submit a report of all required monitoring by:
 - i) April 1st for monitoring which covers the January through December time period.
 - ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
 - c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit.
 - d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. 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 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 annual 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 §(5)(C)1 and §(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

- 1) June 21, 1999;
- 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
- 3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(5)(C)1.A 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 under this rule.
- 6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit.

10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios

None.

10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) 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 the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances 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, §(5)(C)1 and §(6)(C)7 Emergency Provisions

- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A 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(5)(C)5 Off-Permit Changes

- 1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. 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 a Title I modification; Please Note: Changes at the installation which affect the emission limitation(s) classifying the installation as an intermediate source (add additional equipment to the record keeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.
 - b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. 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; and
 - 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.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Jim Hayes, Area Vice President. 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 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MDNR) 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,
- 2) 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,
- 3) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065 §(5)(E)1.A and §(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.

V. Attachments

Attachments follow.

Attachment C

Method 9 Opacity Emissions Observations								
Company					Observer			
Location					Observer Certification Date			
Date					Emission Unit			
Time					Control Device			
Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
SUMMARY OF AVERAGE OPACITY								
Set Number	Time				Opacity			
	Start	End		Sum	Average			

Readings ranged from _____ to _____ % opacity.

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

YES NO Signature of Observer

ATTACHMENT E

Monthly Facility-Wide Emissions of PM₁₀

PM₁₀ Emission Rate (tons/month) = Usage * PM₁₀ EF / 2000 lbs/ton * (1-Control Efficiency/100)

Charcoal Kilns 065-0002					
Emission Unit	Monthly Usage (tons)	PM₁₀ Emission Factor (lbs/ton)	Emission Factor Source	Control Efficiency	PM₁₀ Emission Rate (tons/month)
EP-05		0.318	122015-007		
EP-02		0.012	WebFIRE		
EP-03		0.027	storage pile worksheet		
	(miles)	(lbs/mile)			
EP-04		2.026	haul road worksheet		
Briquet Plant 065-0038					
Emission Unit	Monthly Usage (miles)	PM₁₀ Emission Factor (lbs/mile)	Emission Factor Source	Control Efficiency	PM₁₀ Emission Rate (tons/month)
EP-36		2.0781	EIQ form 2.7	-	
EP-47		0.53	EIQ form 2.7	-	
	(MMBtu)	(lbs/mmBTU)			
EP-24A		0.36	AP-42 Table 1.6-2	3%	
	(1000 gal)	(lbs/1000 gal)			
EP-26		1.11	WebFIRE	-	
EP-27		2.3	WebFIRE	-	
	acres	(lbs/acre)			
EP-01	0.0011	128.3994	storage pile worksheet	-	
EP-02	0.00003	128.3994	storage pile worksheet	-	
EP-03	0.0001	128.3994	haul road worksheet	-	
	(tons)	(lbs/ton)			
EP-04		0.18	WebFIRE	52%	
EP-05		0.36	WebFIRE	52%	
EP-06		0.36	WebFIRE	52%	
EP-07		0.18	WebFIRE	52%	
EP-08		0.26	WebFIRE	52%	
EP-09		0.18	WebFIRE	52%	
EP-10		0.18	WebFIRE	52%	
EP-11		0.18	WebFIRE	4%	
EP-12		0.36	WebFIRE	52%	
EP-13		0.14	WebFIRE	4%	
EP-14		0.18	WebFIRE	52%	

EP-15		0.10	WebFIRE	90%	
EP-16		0.08	WebFIRE	52%	
EP-17		0.36	WebFIRE	4%	
EP-18B		0.12	stack test		
EP-18C		0.02	stack test		
EP-19		0.36	WebFIRE	52%	
EP-20		0.36	WebFIRE	52%	
EP-21		0.10	WebFIRE	90%	
EP-22		0.08	WebFIRE	52%	
EP-23		0.18	WebFIRE	52%	
EP-24B		0.08	stack test	3%	
EP-24D		0.06	stack test		
EP-25		0.10	WebFIRE	4%	
EP-32A		0.62	WebFIRE	90%	
EP-32B		0.62	WebFIRE	90%	
EP-33		0.29	WebFIRE	99%	
EP-37		0.36	WebFIRE		
EP-41		0.36	WebFIRE		
EP-42		0.36	WebFIRE		
Monthly PM₁₀ Emissions (tons/month):					

Attachment H
 Aggregate NOx emissions worksheet

This worksheet covers the period from _____ to _____
 (month/year) (month/year)

Emission Point	Description	¹ Monthly Usage	Units	² Emission Factor (lbsNOx/unit)	³ Total Monthly Emissions (tons/month)
EP-05	Charcoal kilns (#7-16)		tons charcoal	5.46	
EP-18A	Briquet Dryer Line #1 (Aeroglide) - Propane Emissions		1000 gal	19	
EP-24A	Briquet Dryer Line #2 - Sawdust combustion emissions		mmBTU ⁴	0.49	
EP-24A	Briquet Dryer Line #2 - Propane Emissions		1000 gal	19	
EP-26	Boiler - Superior #6971 starch tank heater		1000 gal	19	
EP-27	Boiler - Ajax#77 water tower heater		1000 gal	24	
EP-47	Webb Burner - Sawdust combustion		mmBTU ⁴	0.49	
⁵Total Monthly Installation-Wide NOx Emissions (tons)					
⁶Total 12-Month Rolling Installation-Wide NOx Emissions (tons)					

¹ Enter total amount of material (indicated in the next column) used in month.

² Emission factor sources are from WebFIRE.

³ Total monthly emissions = Monthly Usage x Emission Factor x 0.0005.

⁴ Sawdust heat content is 4.3 mmBTU/ton

⁵ Total installation emissions are the sum of the total monthly emissions for each emission point.

⁶ 12-Month Rolling NOx Emissions = Sum of twelve most recent Combined NOx Compliance Worksheets.

12-Month Rolling Total NOx Emissions less than 100 tons/yr indicates compliance.

STATEMENT OF BASIS

Voluntary Limitations

In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a part 70 operating permit.

Permit History

Royal Oak Enterprises' Salem facility is a Missouri-style charcoal kiln and briquet manufacturer in Salem, MO. There are two facility IDs associated with this installation: 065-0002 (kilns) and 065-0038 (briquette plant). The reason for there being two separate facility IDs is likely due to an exception in 10 CSR 10-6.110(3)(A), the Emission Fee Reporting rule. This exception states that "sources that produce charcoal from wood" are not charged the regular per-ton emission fee. The interpretation from the Emission Inventory Unit is that the kilns are not charged the fee, but all other sources at the installation are. Two facility IDs allows fees to be charged only to sources subject to the rule.

Because there are two facility IDs, two Operating Permits have been issued to this one installation for the last decade: a Basic for the kilns and an Intermediate for the briquet plant. These two permits are now being combined into one Intermediate Operating Permit. The format of this permit is therefore different that most because the two Facility IDs are being maintained. Each Permit Condition lists the Emission Point label for each unit from each ID. There are duplicate Emission Point labels (EP-01 through -04). Each Permit Condition lists both the ID and emission point label.

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. Intermediate Operating Permit Application, received February 7, 2014;
2. Intermediate Operating Permit, OP2009-005A, April 15, 2011;
3. Basic Operating Permit, September, 2011;
4. Construction Permit #062000-010, Issued July 6, 2000;
5. Construction Permit #082001-026, Issued August 30, 2001;
6. Construction Permit # 012002-010, Issued January 7, 2002;
7. Construction Permit #122009-012, issued December 18, 2009;
8. Construction Permit #122015-007, issued December 7, 2015;
9. 2013 Emissions Inventory data from MOEIS;
10. WebFIRE; and
11. U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition;

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.

10 CSR 10-6.330 – *Restriction of Emission from Batch-Type Charcoal Kilns*. As explained above and in the facility description, this document combines two previously separate permits for this installation. 10 CSR 10-6.330 was part of the Basic Operating Permit for ID 065-0002. This rule is now being incorporated into the combined Intermediate Operating Permit for the installation.

40 CFR Part 63 Subpart CCCCCC – *National Emissions Standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities* – this rule applies to gasoline dispensing facilities. EP-35 is a 300 gallon gasoline storage tank.. Because the monthly throughput is less than 10,000 gallons, the only requirements are those listed in Permit Condition 3 [§ 63.11111(b)].

Other Air Regulations Determined Not to Apply to the Operating Permit

The Air Pollution Control Program (APCP) has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits*

This rule is not applicable because the installation is in an ozone attainment area.

Construction Permit History

The following construction permits were issued to this installation under 10 CSR 10-6.060:

Construction Permit #062000-010 – this permit was issued in July 2000 for the construction of new kilns. It included a NO_x limit on the kilns. These kilns are being replaced, which makes the conditions of this permit obsolete. In order to maintain status as a synthetic minor source, the 100 ton per year NO_x limit was transferred to Plantwide Condition 1 (voluntary limitations) for this operating permit.

Construction Permit No. 082001-026 – this permit was issued in 2001 for the installation of EP24 Briquet Dryer Line #2 and EP30 Transfer Sawdust to Burner. These units were installed. There are no special conditions.

Construction Permit No. 012002-010 – this permit was issued in 2002 for the installation of EP37 Sawdust Hopper, EP38 (2) Belt Conveyors, and EP39 Hammermill. The construction permit also split EP30 Transfer Sawdust to Burner into EP40 Pneumatic Transfer to Silo, EP41 Silo Loadout, and EP42 Screw Conveyor. The special conditions of this permit are superseded by CP 122009-012.

Construction Permit No. 122009-012 – this permit was issued in 2009 for the installation of EP43 Cyclone Separator, EP44 Conveyor, EP45 Fuel Storage Bin, and EP46 Webb Burner. The installation of this new equipment increases the maximum hourly design rate of existing emission units EP38 two Belt Conveyors, EP39 Hammermill, and EP40 Pneumatic Transfer to Silo. Special Condition No. 1 superseded the special conditions of Construction Permit No. 012002-010. Special Condition No. 2 limits the new equipment and the equipment with increased maximum hourly design rate to 15.0 tons/yr of PM₁₀ for de minimis construction permit status. Special Condition No. 3 requires cyclone control on

the new equipment. Special Condition No. 4 requires fabric filter control on the equipment with increased maximum hourly design rate. These conditions have been applied in this Operating Permit.

Construction Permit #122015-007 – this permit was issued in December 2015 for the replacement of the six existing kilns with ten new kilns. The existing kilns are to be made inoperable. Provisions include requirements to operate an afterburner as a control device.

New Source Performance Standards (NSPS) Applicability

40 CFR Part 60, Subpart Dc – *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* is not applicable to the installation. The regulation is not applicable to EP24 Briquet Dryer Line #2 and EP46 Web Burner as these emission units are direct heating sources.

Maximum Achievable Control Technology (MACT) Applicability

The installation is an area source for Hazardous Air Pollutants (HAPs).
 40 CFR Part 63 Subpart JJJJJ – *National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources*. None of the boilers are subject to JJJJJ because they are gas-fired (i.e. they combust only natural gas) [§63.11195(e)]. EP-27 is a fuel-oil fired boiler and meets the definition of a water-heater and is not subject to Subpart JJJJJ [§63.11195(f)].

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

In the permit application and according to APCP records, there was no indication that any Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements apply to this installation. The installation is subject to these regulations if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

Other Regulatory Determinations

1. 10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants* – the units listed below have a PM₁₀ emission rate such that an exceedance of the opacity standard is highly unlikely. Therefore, no provisions of §6.220 were required for these visible emission sources.

Emission Point No.	Description	Emission Point No.	Description
EP01	Raw Charcoal Storage	EP23	Transfer Fines - Bucket Elevator
EP02	Sawdust Storage Pile	EP24C	Briquet Dryer Line #2 - Propane Combustion
EP03	Anthracite Coal & Coke Storage	EP26	Boiler - 1 MMBtu LPG Starch Tanks Heater
EP05	Load Sawdust Hopper	EP27	Boiler - 0.84 MMBtu Fuel Oil Water Tower Heater

Emission Point No.	Description	Emission Point No.	Description
EP11	Captured Cyclone Fines - Conveyor #4	EP36	Haul Road
EP13	Load Starch Mixing Tank	EP38	Belt Conveyor
EP14	Load Materials Mixer #3	EP39	Hammermill
EP16	Briquet Screening - Fines	EP40	Pneumatic Transfer To Silo
EP17	Transfer Fines - Bucket Elevator	EP41	Silo Loadout
EP18A	Dryer Line #1 - Propane Combustion	EP42	Screw Conveyor
EP22	Briquet Screening - Fines	EP47	Haul Road

- 10 CSR 10-6.261, *Restriction of Emission of Sulfur Dioxide* – there are five emission units that emit SO₂: EP-18A Briquet Dryer Line #1, EP-24A Briquet Dryer Line #2, EP-26 Superior Boiler, EP-27 Ajax Boiler, and EP-46 Webb Burner. Of these five units, four (EPs-18A, 24A (propane only), 26, & 46 (propane only)) combust only liquefied petroleum gas and are exempt under §6.261(1)(A).

Indirect sources greater than three hundred fifty thousand British thermal units (350,000 BTUs) per hour are subject to an eight lb/mmBTU limit per §6.261(3)(B)1. EP-24A & EP-46 (sawdust combustion) are exempt because the SO₂ emission factor for wood residue combustion is 0.025 lb/mmBTU, which is well below the exemption level of 8 lb/mmBTU (Source: U.S. EPA Document AP-42 Table 1.6-2).

EP27 is also exempt under §6.261(3)(B)1:

$$\text{Distillate Oil SO}_2 \text{ emission factor } \left(\frac{\text{lbs}}{\text{mmBTU}} \right) = \frac{\left(\frac{142 \times 0.5 \text{ lbs}}{1000 \text{ gallons}} \right)}{\left(\frac{140 \text{ mmBTU}}{1000 \text{ gallons}} \right)} = \frac{0.507 \text{ lb}}{\text{mmBTU}}$$

(AP-42 Table 1.3-1 (9/98))

- 10 CSR 10-6.330 – *Restriction of Emission from Batch-Type Charcoal Kilns*. This rule contains many requirements for initial performance testing of charcoal kilns. This performance testing was conducted Royal Oak’s Mountain View facility in September 1999, Salem facility in July 2001, and Ellsinore facility in June 2005 for PM, VOC, and CO. The new kilns at the Salem facility are substantially similar to other kilns and associated control devices. Since this requirement has already been met, it has not been included in this document [(3)(F)7].

This rule also contains a minimum temperature requirement of 1520 deg F in (3)(B)(4). However, (3)(F)(8) allows for a lower minimum temperature if certain conditions are met, including demonstration of >= 99% control efficiency of CO. Testing conducted by Shell Engineering and accepted by the Air Pollution Control Program showed a control efficiency of 99.92% at an operating temperature of 1430 deg F. Therefore, the minimum temperature in Permit Condition 9 is 1430 deg F, not 1520 [(3)(F)8].

(3)(A)2.B. refers to a calculated VOC emission rate using 99% controls. That rate, 0.873 tons/hour @ 270 lbs/ton with 99% control, is far greater than 0.24 lbs/hr. Therefore, the emission limit in Permit Condition 7 is 0.24 lbs/hr.

Monitoring for compliance with the emission limits in Permit Condition 7 is achieved through the monitoring requirements of Permit Condition 9. When the emission controls are operated properly, as set forth in Permit Condition 9, the PM, VOC, and CO limits in Permit Condition 7 will be met. This has been verified by initial performance and subsequent testing described above.

4. 10 CSR 10-6.400 *Restriction of Emission of Particulate Matter from Industrial Processes*-emissions from the charcoal kilns (ID 065-0002) are specifically exempted by (1)(B)5. Emissions from fugitive sources (EP-01, -02, -03, -36, & -47) are exempted by (1)(B)7. All emission units at the briquet plant (065-0038) are conditionally exempt under the formula contained in (3)(A)1. Some emission units, whose emission rates are in bold, are also exempt under (1)(B)12.

The following table shows the calculations for the 6.400 Limit.

Emission Unit	Description	MHDR (tons/hr)	Emission Factor (lb/ton)	Uncontrolled PM Emission Rate (lb/hr)	6.400 Limit (lb/hr)
EP-04	Load Raw Charcoal Hopper	6.30	0.18	1.13	14.07
EP-05	Load Sawdust Hopper	1.10	0.36	0.40	4.37
EP-06	Load Coal/Coke Hopper	3.10	0.36	1.12	8.75
EP-07	Transfer to Hammermill, conveyor 1	10.50	0.18	1.89	19.81
EP-08	Hammermill	10.50	0.26	2.73	19.81
EP-09	Lime Transfer - Lime Hopper	3.10	0.18	0.56	8.75
	Lime Transfer - Conveyor 2	3.10	0.18	0.56	8.75
	Lime Transfer - Conveyor 3	3.10	0.18	0.56	8.75
EP-10	Transfer Mixture - Bucket Elevator	13.60	0.18	2.45	23.56
	Transfer Mixture - Screw Conveyor	13.60	0.18	2.45	23.56
	Transfer Mixture - Holding Hopper	13.60	0.18	2.45	23.56
EP-11	Convey Cap Fines Cyclone - Conv-4	0.00	0.18	0.00	0.06
EP-12	Transfer Mixture - Line 1, Conv 5	5.00	0.36	1.80	12.05
	Transfer Mixture - Line 1, Conv 6	5.00	0.36	1.80	12.05
EP-13	Load Starch Mixing Tank	0.80	0.14	0.11	3.53
EP-14	Load Mixer 3	5.00	0.18	0.90	12.05
EP-15	Transfer Wet Briquet - Conv 7	6.50	0.10	0.65	14.37
	Transfer Wet Briquet - Conv 8	5.50	0.10	0.55	12.85
	Transfer Wet Briquet - Conv 21	5.00	0.10	0.50	12.05
EP-16	Briquet Screening - Fines	5.50	0.08	0.44	12.85
EP-17	Transfer Fines - Bucket Elevator	0.50	0.36	0.18	2.58
EP-18A	Briquet Dryer Line #1 (Aeroglide) - Propane Emissions	10.50	1.11	11.61	19.81

Emission Unit	Description	MHDR (tons/hr)	Emission Factor (lb/ton)	Uncontrolled PM Emission Rate (lb/hr)	6.400 Limit (lb/hr)
EP-18B	Cooler #1 - Process Emissions	5.00	0.12	0.61	12.05
EP-18C	Briquet Dryer Line #1 (Aeroglide) - Process Emissions	5.00	0.02	0.11	12.05
EP-19	Transfer Mixture to Mixer #1 or #2, Conveyor #11 or #12	9.00	0.36	3.24	17.87
EP-20	Load Mixer #1 or #2	9.00	0.36	3.24	17.87
EP-21	Transfer Wet Briquet - Conveyor #13	9.00	0.10	0.90	17.87
	Transfer Wet Briquet - Conveyor #14	9.00	0.10	0.90	17.87
	Transfer Wet Briquet - Conveyor #15	9.00	0.10	0.90	17.87
	Transfer Wet Briquet - Conveyor #16	9.00	0.10	0.90	17.87
EP-22	Briquet Screening - Fines	10.00	0.08	0.80	19.18
EP-23	Transfer Fines - Bucket Elevator	1.00	0.18	0.18	4.10
EP-24A	Briquet Dryer Line #2 - Sawdust combustion emissions	20.00	0.36	7.20	30.51
	Briquet Dryer Line #2 - Propane Emissions	0.14	1.11	0.16	1.12
EP-24B	Briquet Dryer Line #2 - Process Emissions	9.00	0.08	0.74	17.87
EP-24D	Cooler #2 - Process Emissions	9.00	0.06	0.55	17.87
EP-25	Conveying/Handling of Briquets - Conveyor #9	5.00	0.01	0.05	12.05
	Conveying/Handling of Briquets - Conveyor #17	14.00	0.01	0.14	24.03
	Conveying/Handling of Briquets - Conveyor #18	9.00	0.01	0.09	17.87
	Conveying/Handling of Briquets - Conveyor #20	14.00	0.01	0.14	24.03
	Bagging of Charcoal Briquets	14.00	0.06	0.84	24.03
	Briquet Silo Loading	14.00	0.01	0.14	24.03
EP-26	Boiler - Superior #6971 starch tank heater	1.00	1.10	1.10	4.10
EP-27	Boiler - Ajax#77 water tower heater	0.84	2.30	1.93	3.65
EP-32A	Briquet Roll Press	5.50	0.62	3.41	12.85
EP-32B	Briquet Roll Press	10.00	0.62	6.20	19.18
EP-33	Corn Starch Receiving Silo	18.00	0.29	5.29	28.43
EP-34	Dip Tank	6.00	0.60	3.60	13.62
EP-37	Load Sawdust Hopper	2.50	0.36	0.90	7.58
EP-38	Belt Conveyor - segment 1	2.50	0.36	0.90	7.58
	Belt Conveyor - segment 2	4.20	0.36	1.51	10.72
EP-39	Hammermill	4.20	0.20	0.84	10.72
EP-40	Pneumatic Transfer to Silo	4.20	0.36	1.51	10.72
EP-41	Silo Loadout	1.25	0.36	0.45	4.76
EP-42	Screw Conveyor	1.25	0.36	0.45	4.76
EP-43	Cyclone Separator	4.20	0.36	1.51	10.72
EP-44	Conveyor	4.20	0.36	1.51	10.72
EP-45	Fuel Storage Bin	4.20	0.36	1.51	10.72
EP-46	Webb Burner - Sawdust combustion	12.00	0.36	4.32	21.67

Updated Potential to Emit for the installation is shown below:

Pollutant	Potential to Emit (tons/yr)¹	Pollutant	Potential to Emit (tons/yr)¹
CO	88.25	HAP	2.93
NH3	0.06	Methanol	0.11
NOx	112.30	POM	0.00
PM10	363.64		
PM25	352.90		
SOx	3.71		
VOC	18.80		

¹Potential Emissions are based upon 8,760 hours of annual operation unless otherwise noted.

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 Air Pollution Control Program'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).

A draft of the Part 70 Operating Permit for Royal Oak Enterprises - Salem was placed on public notice on March 27, 2015, by the Missouri Department of Natural Resources (MDNR). Comments were received from Mark Smith of Region VII of the Environmental Protection Agency. The seven comments are addressed in the order in which they appear within the letter(s).

Comment #: 1

Plant-wide **Permit Condition PW001** establishes a voluntary limit of less than 100 tons of particulate matter less than or equal to ten (10) microns in diameter (PM10) per consecutive 12-month period from the entire installation. This synthetic minor limit on PM10 is intended to restrict emission to below major source thresholds. However, EPA cannot determine whether or not Permit Condition PW001 is enforceable from a practical matter. In its response to a petition against an operating permit issued to Hu Honua Bioenergy Facility, the Environmental Protection Agency granted the petitioners contention that the operating permit failed to ensure the enforceability as a practical matter because the permit was unclear whether all actual emissions were considered in determining compliance. Specifically, the permit failed to include emissions from malfunctions or upset conditions, although the permit did address start-up and shutdown emissions. Permit Condition PW001, in the Royal Oak – Salem draft operating permit, is unclear whether or not start-up, shutdown, malfunction and upset emissions are considered in the determination of compliance. In addition, it is unclear whether or not all emission units with the potential to emit PM10 are included in the compliance determination. MDNR requires the permittee to use Attachments E, F, and G (or equivalents) to demonstrate compliance. However, briquette plant emission units EP01, EP02, and EP03 are not included. Additionally, the validity of emission factors and the stated control efficiency, on Attachments E, F, and G cannot be verified without a legitimate reference. Therefore, EPA believes Permit Condition PW001 is not practically enforceable and recommends MDNR provide the additional detail as to how Royal Oak – Salem PM10 emissions shall be measured to assure compliance with the voluntary limit.

Response to Comment:

PW001 applies to all PM10 emissions from the installation. However, there are no emission factors for start-up, shut-down, and especially upset/malfunction emissions.

PW001 applies to all emission units at the installation. Those units are listed in the two tables in Section I. Briquette Plant emission units EP-01, -02, and -03 are storage piles. Rows for these three units were added to Attachment E, though the values are fixed and will not change month to month. A column with the emission factor source was added to the table.

Comment #: 2

Permit Condition 3 incorporates applicable requirements from 40 CFR part 63 Subpart CCCCCC; *Maximum Achievable Control Technology for Gasoline Dispensing Facilities* (MACT CCCCCC). The applicable monitoring requirement written in Permit Condition 3 say: “None-See Statement of Basis.” This requirement, as written, is not enforceable from a practical matter because the Statement of Basis is not an actual part of the permit according to 10 CSR 10-6.065(5)(E)1.A. In as much as there are no applicable monitoring requirements, EPA recommends MDNR remove the monitoring requirement

section form Permit Condition 3 and leave the explanation in the Statement of Basis. Finally, according to 10 CSR 10-6.075, MDNR relies on the EPA for compliance enforcement with MACT CCCCCC. Therefore, EPA recommends that MDNR add specific clarifying language in Permit Condition 3 to show EPA as the primary compliance information recipient related to MACT CCCCCC compliance and MDNR as secondary.

Response to Comment:

Although there may be more, there are four essential elements to each permit condition: an emission or operational limit, monitoring, recordkeeping, and reporting. In cases such as Permit Condition 3, in which no monitoring is required, MDNR's practice is to keep the heading with the text "None" below. The comment directing the reader to the Statement of Basis is for clarity.

The reporting section was updated to make EPA Region VII the main recipient of MACT CCCCCC reports.

Comment #: 3

The monitoring requirements in **Permit Condition 2** require the permittee to monitor and record the operating pressure drop across the fabric filters at least once every 24 hours. It is MDNR's customary practice to include record keeping documents as attachments to operating permits, for public review and comment. However, Permit Condition 2 has no reference to an operational record keeping document and no affiliated attachment. Therefore, EPA recommends MDNR include a copy of Royal Oak – Salem's fabric filter pressure drop record keeping document as an attachment to the operating permit, with the appropriate reference in Permit Condition 2.

Response to Comment:

A document to record pressure drop was added as Attachment K and referenced in Permit Condition 2.

Comment #: 4

Permit Condition 7 includes particulate matter, volatile organic compound (VOC) and carbon monoxide (CO) emission limitations from six (6) batch charcoal kilns. However, Permit Condition 7 fails to include any monitoring to verify compliance with these emission limitations. In accordance with the authority granted MDNR in 10 CSR 10-6.065(5)(C), EPA recommends MDNR include in Permit Condition 7 the monitoring requirements Royal Oak – Salem employs to verify compliance with their particulate matter, VOC, and CO emission limits.

Response to Comment:

Monitoring for compliance with the emission limits in Permit Condition 7 is achieved through Permit Condition 9. When the emission controls are operated properly, as set forth in Permit Condition 9, the PM, VOC, and CO limits in Permit Condition 7 will be met. This is the reason monitoring has not been required in past construction and operating permits. The Statement of Basis, Other Regulatory Determinations 3, has been updated to clarify this.

Comment #: 5

Permit Condition 8 includes three (3) separate applicable requirements: one (1) operational limitation; and two (2) monitoring and record keeping which require “**departmental approval**” (emphasis added). EPA suggests MDNR clarify their meaning of “**departmental approval.**”

Response to Comment:

The rule which Permit Condition 8 applies to the kilns at Royal Oak uses the phrase “department approval”. Department, as defined by 10 CSR 6.020(D)(7), includes “the director...or the person or division or program within the department delegated the authority to render the decision, order, determination, finding, or other action”. Multiple parties in the Department are therefore capable of approving any changes.

Comment #: 6

Attachment H: *Aggregate NOx emission worksheet*, is included in the operating permit for the permittee to verify compliance with the nitrogen oxide (NOx) emission limits in Permit Condition 1. Attachment H includes a footnote which says: “*Note 2: NOx emission factor is calculated from performance tests conducted at this installation.*”

However, there are no performance testing requirements in Permit Condition 1 or in any of the other permit conditions in this operating permit. EPA believes, however, that stack testing is the preferred method for the determination of emission factors and recommends MDNR, in accordance with their authority provided in 10 CSR 10-6.065(5)(C), require Royal Oak-Salem to conduct NOx emission factor determination testing at least once during the term of this operating permit, for use in verifying compliance with the NOx emission limits.

Response to Comment:

Previous testing, including the original performance testing in 2001 and subsequent testing related to a modified temperature requirement, both indicated that NOx emissions are well below levels that cause concern or trigger additional testing. The Permit Section is currently reviewing its standard practice on this subject and may make modifications in the future.

Comment #: 7

The language regarding the written notification requirement for Off-Permit Changes in Section V used in operating permits has recently been modified to more closely match the working in 10 CSR 10-6.065(5)(C)5. Therefore, EPA recommends MDNR use the newer Off-Permit Change wording in the Royal Oak-Salem operating permit.

Response to Comment:

The Off-Permit Changes text was updated.