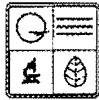


STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

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

Permit Number: 022014-008

Project Number: 2013-11-054
Installation Number: 215-0003

Parent Company: Packaging Service Co., Inc.

Parent Company Address: 1904 Mykawa Road, Pearland, TX 77581

Installation Name: Packaging Service Co., Inc. - Raymondville Facility

Installation Address: 7903 Sumpter Road, Raymondville, MO 65555

Location Information: Texas County, S01, T30N, R9W

Application for Authority to Construct was made for:
Construction of four new charcoal kilns. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

FEB 20 2014

EFFECTIVE DATE

Handwritten signature of Kyad Moore in black ink, written over a horizontal line.
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Permit No.	
Project No.	2013-11-054

SPECIAL CONDITIONS:

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

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Packaging Service Co., Inc. - Raymondville Facility
Texas County, S01, T30N, R9W

1) Charcoal Kiln Processing Requirements

- A. Packaging Service Co., Inc. - Raymondville shall not simultaneously burn more than three (3) kilns in the bank of nine kilns known as Kiln #2, #3, #4, #5, #6, #13, #14, #15, and #16.
- B. Packaging Service Co., Inc. - Raymondville 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 Special Conditions 1.A.

2) Control Device Requirements

- A. Packaging Service Co., Inc. - Raymondville shall control emissions from the charcoal kilns #2, #3, #4, #5, #6, #13, #14, #15, and #16 using Afterburner #2 as specified in the permit application. The afterburner shall be operated and maintained in accordance with the manufacturer's specifications.
- B. Packaging Service Co., Inc. - Raymondville shall continuously monitor and record the temperature of the Afterburner #2 any time the charcoal kilns #2, #3, #4, #5, #6, #13, #14, #15, and #16 are in operation.
- C. Packaging Service Co., Inc. - Raymondville shall ensure that the temperature of the Afterburner #2 is maintained within the normal operating range established in the emissions test reports that were provided with the application. Emission test reports indicate that a minimum temperature of 1554°F must be maintained to ensure continued compliance.
- D. Packaging Service Co., Inc. - Raymondville may submit an afterburner temperature control analysis and may propose an alternate temperature control plan to the Director of the Air Pollution Control Program. Upon approval by the Director, an alternate temperature control plan may be implemented.

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Permit No.	
Project No.	2013-11-054

SPECIAL CONDITIONS:

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

- E. Packaging Service Co., Inc. - Raymondville Facility shall maintain an operating and maintenance log for Afterburner #2 which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

- 3) Shut Down of Existing Equipment at Installation
 - A. Packaging Service Co., Inc. – Raymondville shall render Kiln #1 inoperable before the date the new kilns #13, #14, #15, and #16, that are being added under this permit, begin operation. Kiln #1 may not be operated after the startup of the new kilns without first obtaining a New Source Review permit or receiving approval for the like kind replacement of other existing equipment at the installation from the Air Pollution Control Program.

 - B. Packaging Service Co., Inc. – Raymondville shall notify the Air Pollution Control Program’s Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 15 days after the date the existing equipment (as indicated in Special Condition Number 3) A. was rendered inoperable.

- 4) Record Keeping and Reporting Requirements
 - A. Packaging Service Co., Inc. - Raymondville Facility 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. These records shall include MSDS for all materials used.

 - B. Packaging Service Co., Inc. - Raymondville Facility shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2013-11-054
Installation ID Number: 215-0003
Permit Number:

Packaging Service Co., Inc. - Raymondville Facility Complete: November 26, 2013
7903 Sumpter Road
Raymondville, MO 65555

Parent Company:
Packaging Service Co., Inc.
1904 Mykawa Road
Pearland, TX 77581

Texas County, S01, T30N, R9W

REVIEW SUMMARY

- Packaging Service Co., Inc. - Raymondville Facility has applied for authority to construct four new charcoal kilns.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are below major source level and individual SMALs.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- The existing Afterburner #2 is being used to control the condensable PM₁₀, CO, VOC, POM and HAP emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all the pollutants are de minimis.
- This installation is located in Texas County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is classified as item number 25. Charcoal production facilities. The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are de minimis.

- Emissions testing is not required for the equipment since it was already conducted on October 4, 2011.
- A Basic Operating Permit application is not required for this installation since the conditioned potential emissions of the facility is below de minimis.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Packaging Service Co., Inc. is an existing charcoal production facility located in Raymondville, Missouri in Texas County. This site was formerly owned by Thomason Charcoal and operated by Royal Oak Enterprises, Incorporated (Royal Oak). Royal Oak received permit number 072002-006 for the installation of 3 new charcoal kilns and two sawdust-fired afterburner controls. As a result of that project, the facility's potential emissions were reduced from major source levels to minor source levels, and Royal Oak requested that their Part 70 operating permit be terminated. The sawdust-fired afterburners did not pass performance testing requirements, and on February 15, 2005 Royal Oak shut down all operating kilns at the Raymondville site in compliance with a 1997 Consolidated Consent Agreement and Consent Order between Royal Oak and the Environmental Protection Agency (EPA).

GoldStar Charcoal purchased the facility in 2006 and replaced the sawdust-fired afterburners with propane-fired afterburners. Afterburner #1 (CD01), which controls emissions from kilns 7-12 passed the performance test requirements on February 13, 2007. Kilns 1-6 have not operated since being shut down in 2005, and therefore afterburner #2 (CD02), which controls emissions from these kilns, was not tested before GoldStar Charcoal ceased operations in 2008.

GoldStar Charcoal also planned to install a natural lump charcoal screening and bagging operation. GoldStar Charcoal was issued a permit applicability determination for this project from the Air Pollution Control Program on August 14, 2006. At that time, controlled potential emissions of criteria pollutants were used to determine permit applicability, and a construction permit was not required for the proposed screening and bagging operation. However, this project was not installed as planned. Renewable Energies purchased the site in 2009 from Mid America Bank and planned to finish the construction of the screening and bagging operation. Since the original determination for this project, the Air Pollution Control Program has changed its policy and no longer considered controls in determining permit applicability. Therefore, a construction permit was required for the installation of a screening and bagging operation for natural lump charcoal (Permit # 122009-004).

In the fall of 2010, Packaging Service Co., Inc. purchased the Raymondville facility from Renewable Carbon Energies.

A stack test was performed on Afterburner No. 1 on February 13, 2007, when GoldStar Charcoal owned the facility. Afterburner #2 and the pre-heater were tested October 4, 2011 after Packaging Service Co., Inc. purchased the facility.

An operating permit has not been issued to this facility since its Part 70 operating permit was terminated in 2005. The following construction permits have been issued to to this site from the Air Pollution Control Program.

Table 1: Previously Issued Construction Permits

Permit Number	Description
072002-006	Project number 2002-06-023 was reviewed for the construction of 3 new charcoal kilns and 2 afterburner controls
122009-004	Project number 2009-08-057 was reviewed for the installation of a natural lump charcoal screening and bagging operation.

PROJECT DESCRIPTION

Packaging Service Co., Inc. plans to construct four new charcoal kilns at the Raymondville Facility, located in Raymondville, Missouri. The new kilns will be connected to the existing System #2, consisting of Kilns #1, #2, #3, #4, #5, and #6, which are connected to Afterburner #2. Packaging Service Co., Inc. intends to decommission Kiln #1 due to its aging condition. The new Kilns #13, #14, #15, and #16 will be of either similar construction to the existing kilns or of steel construction connected into System #2. The sizes will not increase and therefore no increase in production or potential to emit. Although four kilns are replacing one kiln, Special Condition 1 limits System #2 to burn no more than three kilns simultaneously. This reflects the test parameters conducted of three operating kilns for Afterburner #2 on October 4, 2011. There is also a pre-heater attached to System #2 and its stack results are reflected in the test data.

Emission factors for this application are derived from the test results and production values obtained from the October 4, 2011 stack test and the Air Pollution Control Program's Testing and Emission Unit's letter dated January 27, 2012.

Obtained from the Air Pollution Control Program letter (1-27-2012), the "three kilns were loaded with a total of 433 tons of slabs and produced 87 tons of charcoal, a yield of 20%". The MHDR was determined to be 0.55 tons of charcoal/hour for the three kilns burning in that phase of 158 hours.

Although there was a letter from Air Pollution Control Program (dated January 27, 2012) stating that only three kilns connected to this afterburner may burn at the same time, there was not a federally enforceable condition that would require that scenario. This is the basis for this permit.

EMISSIONS/CONTROLS EVALUATION

Emissions from the four new charcoal kilns (#13, #14, #15, and #16) along with the five remaining existing kilns (#2, #3, #4, #5, and #6) will be controlled by Afterburner #2 (CD-2). Emission factors for this project were determined by prior stack testing performed on this afterburner. The testing was performed on Afterburner #2 and the pre-heater October 4, 2011 at the Raymondville facility. Results of this testing were used to develop the emission factors and control efficiencies for PM₁₀, NO_x, VOCs, and CO. There were no test values for PM filterable or PM condensable for the pre-heater. Therefore, all PM₁₀ and PM_{2.5} were conservatively assume to be equal to Total PM. The test results have been reviewed and approved by the Air Pollution Control Program's Testing and Emission Unit. In a memo dated January 27, 2012, the Air Pollution Control Program's Testing and Emission Unit determined that no further testing was required unless the afterburner should be reconfigured to control more than three (3) kilns simultaneously. Therefore, Special Condition 1 of this permit requires that no more than three kilns, being controlled by the same afterburner, may operate in the burn phase simultaneously.

The potential emissions of methanol were determined using emission results from the stack inlet (uncontrolled) and calculated using the destruction efficiency of 99.98%. The potential emissions of POM and the ratio between methanol and methane was determine by using factors from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 10.7 *Charcoal* (September, 1995). Test reports confirm that the expected control efficiency for volatile HAPs is 99.98%, resulting in potential emissions of 0.009 tons per year for methane, 0.012 tons per year for methanol and an insignificant level of POM (4.582E-06). Sulfur oxides (SO_x) emissions are expected to be negligible and were not determined.

CO₂ emissions were calculated using the stack data test report stating that CO₂ concentration was 18.42 % (average) of the dry flow volume for Afterburner #2 and 7.963% (average) of the dry flow volume for the pre-heater. Using the mass emission rate calculation, CO₂, GHG(mass) and GHG(CO₂e) emissions were determined.

Haul road and storage pile emissions were not calculated because there will not be an increase in the installation wide MHDR or PTE.

The following table provides an emissions summary for this project. Existing potential emissions are from Construction Permit #122009-004. Existing actual emissions are from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the three kilns burning simultaneously, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ¹	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Afterburner #2 and pre-heater	New Installation Conditioned Potential
PM	25.0	N/D	N/D	0.565	N/D
PM ₁₀	15.0	14.42	0.5829	0.565	14.42
PM _{2.5}	10.0	N/D	0.3318	0.565	N/D
SOx	40.0	N/D	N/A	N/A	N/D
NOx	40.0	22.50	1.6054	3.35	22.50
VOC	40.0	2.08	0.3366	0.57	2.08
CO	100.0	15.34	0.8474	1.77	15.34
POM ²	10.0/0.01	N/D	N/D	8.248E-05	N/D
Methanol ³	10.0/10.0	N/D	N/D	0.049	N/D
Methane	N/A	N/D	N/D	0.036	N/D
CO ₂	N/A	N/D	N/D	4380.62	N/D
GHG (CO ₂ e)	75,000 / 100,000	N/D	N/D	4381.38	N/D
GHG (mass)	0.0 / 100.0 / 250.0	N/D	N/D	4380.66	N/D
HAPs	10.0/25.0	N/D	N/D	0.01	N/D

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

¹Existing emissions were taken from Permit # 122009-004 (Project 2009-08-057). Since there is no increase in the facility's potential to emit due to the limit of only three kilns allowed to burn at one time going through Afterburner #2, the Existing Potential to Emit and the New Installation Conditioned Potential will be the same.

²Major source level is 10 tons per year; SMAL for POM is 0.01 tons per year.

³Major source level is 10 tons per year; SMAL for Methanol is 10.0 tons per year.

10 CSR 10-6.330, *Restriction of Emissions from Batch-Type Charcoal Kilns*, has a minimum temperature requirement of 1520°F; however, the afterburner temperature was recorded at three different locations with the highest readings, ranging from 1549°F to 1707°F and averaging 1636°, recorded by the "Zone" thermocouple. The temperature may not fall below 95% of this average (1554°F) to assure continued compliance. In the memo dated January 27, 2012, the Air Pollution Control Program's Testing and Emission Unit determined that a minimum temperature of 1554°F is needed to achieve destruction efficiencies exceeding 99% for this after burner design.

PERMIT RULE APPLICABILITY

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

APPLICABLE REQUIREMENTS

Packaging Service Co., Inc. - Raymondville Facility shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065 is not required since the conditioned potential emission of the facility is below de minimis
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of From Batch-Type Charcoal Kilns*, 10 CSR 10-6.330

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Kolb, Kathy
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 22, 2013, received November 26, 2013, designating Packaging Service Co., Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Air Pollution Control Program Emission and Testing Unit Letter, January 27, 2012
- *Source Emission Report prepared for Packaging Service Co., Inc. regarding Afterburner #2*, performed October 4, 2011

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	
CFR	Code of Federal Regulations	National Emissions Standards for Hazardous Air Pollutants
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	NSPS	New Source Performance Standards
CO_{2e}	carbon dioxide equivalent	NSR	New Source Review
COMS	Continuous Opacity Monitoring System	PM	particulate matter
CSR	Code of State Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
dscf	dry standard cubic feet	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
EQ	Emission Inventory Questionnaire	ppm	parts per million
EP	Emission Point	PSD	Prevention of Significant Deterioration
EPA	Environmental Protection Agency	PTE	potential to emit
EU	Emission Unit	RACT	Reasonable Available Control Technology
fps	feet per second	RAL	Risk Assessment Level
ft	feet	SCC	Source Classification Code
GACT	Generally Available Control Technology	scfm	standard cubic feet per minute
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Stephen Craig
Corporate EH&S Manager
Packaging Service Co., Inc. - Raymondville Facility
P.O. Box 65
Houston, MO 65483-0065

RE: New Source Review Permit - Project Number: 2013-11-054

Dear Mr. Craig:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Kathy Kolb, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southeast Regional Office
PAMS File: 2013-11-054

Permit Number: