

ADEQ MINOR SOURCE AIR PERMIT

Permit No. : 0892-AR-2

IS ISSUED TO:

Royal Oak Enterprises, Inc. - Huntsville Plant
724 MC 3026
Huntsville, AR 72740
Madison County
AFIN: 44-00005

THIS PERMIT IS ROYAL OAK ENTERPRISES, INC. - HUNTSVILLE PLANT'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT'S MINOR SOURCE AIR PERMIT AND THE APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 *ET SEQ.*) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Michael Bonds
Chief, Air Division

Date

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List of Acronyms and Abbreviations

A.C.A.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
CFR	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
No.	Number
NO _x	Nitrogen Oxide
PM	Particulate Matter
PM10	Particulate Matter Smaller Than Ten Microns
SO ₂	Sulfur Dioxide
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

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Section I: FACILITY INFORMATION

PERMITTEE: Royal Oak Enterprises, Inc. - Huntsville Plant

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PERMIT NUMBER: 0892-AR-2

FACILITY ADDRESS: 20174 Highway 74
Huntsville, AR 72740

MAILING ADDRESS 20174 Highway 74
Huntsville, AR 72740

COUNTY: Madison

CONTACT POSITION: Larry Frans - Area Vice President of Manufacturing

TELEPHONE NUMBER: (417) 334-4195

REVIEWING ENGINEER: Michael H. Watt

UTM North South (Y): Zone 15: 3996 km
UTM East West (X): Zone 15: 434 km

Section II: INTRODUCTION

Summary of Permit Activity

Royal Oak Enterprises, Inc. – Huntsville Plant located at 20174 Highway 74 in Huntsville, Arkansas, produces charcoal from raw wood. The facility currently has 11 “Missouri Type” kilns controlled by 7 afterburners. This modification removes Kilns #1, #4, and #13 (SN-01, SN-04, and SN-13) and the afterburners associated with those kilns (Afterburner #7, #8, and #9) and updates emission rates based on stack testing. Emissions will now have a plantwide emission limit for all annual emissions, and the hourly emissions will be the worst case hourly emissions with the assumption that all plantwide hourly emissions would come from each individual kiln.

Process Description

Missouri Type kilns are used to produce charcoal through the process of pyrolysis. The kilns are loaded with wood, sealed and then subjected to slow burning by supplying only minimum combustion air to the kiln. The combustion air supply is controlled by a series of air injection ports located at the base of the kiln. This results in a reducing atmosphere which drives off the volatile compounds in the wood and produces charcoal. After cool down, aided by a water mist spray, the kilns are opened and the charcoal is removed. After sorting, the charcoal is weighed and shipped off site for processing into briquettes.

Waste wood, also called slab wood, is purchased from saw mills and is used as the raw material to produce the charcoal. The complete kiln “firing cycle” (loading, firing, cool down, and unloading) takes approximately seven days. Almost all of the emissions occur over a four day period in the middle of the cycle.

Exhaust gases from the kilns enter the base of the oxidizer at a temperature of 200°F to 400°F. The internal configuration of the oxidizer forces the gases to make three passes through the oxidizer, where they are exposed to a minimum combustion temperature of 1,400°F, before exiting the stack. Except for the initial and final hours of the firing cycle, the kiln emissions provide the fuel required to maintain the oxidizer temperature. Auxiliary fuel, when required, is provided by propane and sawdust controlled by a temperature sensor in the oxidizer. The oxidizer controls include a continuous chart recorder that monitors the temperature at the base of the oxidizer, where the propane is injected.

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Regulations

The following table contains the regulations applicable to this permit.

Regulations
Arkansas Air Pollution Control Code, Regulation 18, effective February 15, 1999
Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation 19, effective December 3, 2004

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

Total Allowable Emissions

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
PM	122.5	17.50
PM ₁₀	122.5	17.5
SO ₂	22.4	3.2
VOC	23.1	3.3
CO	164.5	23.5
NO _x	263.2	37.6
Methanol	12.95	1.85

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Section III: PERMIT HISTORY

Air Permit Number 892-A was issued to Royal Oak Enterprises, Inc. on July 19, 1988. This permit was the initial permit for the facility. No pollution control equipment was installed.

Air Permit Number 892-AR-1 was issued to Royal Oak Enterprises, Inc. on October 29, 1998. This permit allowed for the installation of afterburners on all the kilns at facility and updating of emission factors based on stack tests. Particulate matter emissions decreased by 225.36 tons per year while emissions from natural gas combustion were added to the permit.

Section IV: EMISSION UNIT INFORMATION

Specific Conditions

1. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by Specific Conditions #6 and #10. [§19.501 et seq. of Regulation #19, effective December 3, 2004, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
02 and 03	Charcoal Kilns #2 and #3 attached to Afterburner #1	PM ₁₀	17.5	17.5
		SO ₂	3.2	3.2
		VOC	3.3	3.3
		CO	23.5	23.5
		NO _x	37.6	37.6
05	Charcoal Kiln #5 attached to Afterburner #2	PM ₁₀	17.5	
		SO ₂	3.2	
		VOC	3.3	
		CO	23.5	
		NO _x	37.6	
06	Charcoal Kiln #6 attached to Afterburner #3	PM ₁₀	17.5	
		SO ₂	3.2	
		VOC	3.3	
		CO	23.5	
		NO _x	37.6	
07 and 08	Charcoal Kilns #7 and #8 attached to Afterburner #4	PM ₁₀	17.5	
		SO ₂	3.2	
		VOC	3.3	
		CO	23.5	
		NO _x	37.6	
09 and 10	Charcoal Kilns #9 and #10 attached to Afterburner #5	PM ₁₀	17.5	
		SO ₂	3.2	
		VOC	3.3	
		CO	23.5	
		NO _x	37.6	
11 and 12	Charcoal Kilns #11 and #12 attached to Afterburner #6	PM ₁₀	17.5	
		SO ₂	3.2	
		VOC	3.3	
		CO	23.5	
		NO _x	37.6	

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SN	Description	Pollutant	lb/hr	tpy
14	Charcoal Kiln #14 attached to Afterburner #7	PM ₁₀ SO ₂ VOC CO NO _x	17.5 3.2 3.3 23.5 37.6	
01	Charcoal Kiln #1 attached to Afterburner #8	Removed From Service		
04	Charcoal Kiln #4 attached to Afterburner #9	Removed From Service		
13	Charcoal Kiln #13 attached to Afterburner #7	Removed From Service		

2. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition will be demonstrated by Specific Conditions #6 and #10. [§18.801 of Regulation #18, effective February 15, 1999, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
02 and 03	Charcoal Kilns #2 and #3 attached to Afterburner #1	PM Methanol	17.50 1.85	17.50 1.85
05	Charcoal Kiln #5 attached to Afterburner #2	PM Methanol	17.50 1.85	
06	Charcoal Kiln #6 attached to Afterburner #3	PM Methanol	17.50 1.85	
07 and 08	Charcoal Kilns #7 and #8 attached to Afterburner #4	PM Methanol	17.50 1.85	
09 and 10	Charcoal Kilns #9 and #10 attached to Afterburner #5	PM Methanol	17.50 1.85	
11 and 12	Charcoal Kilns #11 and #12 attached to Afterburner #6	PM Methanol	17.50 1.85	
14	Charcoal Kiln #14 attached to Afterburner #7	PM Methanol	17.50 1.85	
01	Charcoal Kiln #1 attached to Afterburner #8	Removed From Service		
04	Charcoal Kiln #4 attached to Afterburner #9	Removed From Service		
13	Charcoal Kiln #13 attached to Afterburner #7	Removed From Service		

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3. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Limit	Regulatory Citation
02	10%	§18.501 of Regulation #18
03	10%	§18.501 of Regulation #18
05	10%	§18.501 of Regulation #18
06	10%	§18.501 of Regulation #18
07	10%	§18.501 of Regulation #18
08	10%	§18.501 of Regulation #18
09	10%	§18.501 of Regulation #18
10	10%	§18.501 of Regulation #18
11	10%	§18.501 of Regulation #18
12	10%	§18.501 of Regulation #18
14	10%	§18.501 of Regulation #18

4. The permittee shall not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303. [§18.901 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
5. The permittee will not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [§18.801 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
6. The permittee will not produce more than 9,500 tons of charcoal at the facility per consecutive 12-month period. [§19.705 of Regulation #19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
7. The permittee will maintain monthly records which demonstrate compliance with Specific Condition #6. The permittee will update the records by the fifteenth day of the month following the month to which the records pertain. The permittee will keep the records onsite, and make the records available to Department personnel upon request. [§19.705 of Regulation #19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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8. All kiln emissions must be vented to a properly operating afterburner at all times. [§19.303 of Regulation #19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
9. The permittee shall use only propane and/or sawdust as an auxiliary fuel to the thermal oxidizers. [§19.705 of Regulation #19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
10. Each thermal oxidizer combustion gas temperature shall be maintained at a minimum of 1,400 degrees Fahrenheit. This will be done by addition of propane and/or sawdust. No kiln shall be operated without the afterburner meeting these requirements. [§19.303 of Regulation #19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
11. To demonstrate compliance with Specific Condition #10, the permittee shall set and maintain a temperature controller connected to the thermocouple located in the exit of the combustion chamber of each thermal oxidizer and shall operate a continuous chart recorder to record the measured temperature. These records shall be maintained on-site and shall be provided to Department personnel upon request. [§19.703 of Regulation #19, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
12. The permittee shall only load and ignite one kiln per afterburner per day. [§19.705 of Regulation #19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
13. The permittee shall maintain records of the loading and igniting dates for each kiln. Records shall be maintained on site and shall be provided to Department personnel upon request. [§19.703 of Regulation #19 and 40 CFR Part 52, Subpart E]
14. Within 180 days of issuance of this permit and every 5 years thereafter, the permittee shall test one thermal oxidizer for PM₁₀, CO, and NO_x emissions using EPA Reference Methods 5 and 202, 10, and 7E respectively and shall test all thermal oxidizers for opacity using EPA Reference Method 9. By using Method 5 and 202 for PM₁₀, the facility will assume all collected particulate is PM₁₀. These tests shall be performed simultaneously and during the period of the burn that has the most emissions (normally the middle four days of the burn). While performing the tests, the kilns associated with each thermal oxidizer shall be operating at 90% of the maximum capacity and during the period of the burn that has the most emissions. The permittee shall submit a written testing protocol to the Air Division Enforcement at least 15 days prior to any scheduled test. [§19.702 of Regulation #19 and 40 CFR Part 52, Subpart E]
15. Any afterburners constructed after January 1, 2005, shall be designed and built such that no flame will be visible beyond the stack. Any visible flame on the new afterburners will be considered an upset condition and will be addressed as listed in General Condition #10. [§19.303 of Regulation #19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

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Section V: INSIGNIFICANT ACTIVITIES

The following sources are insignificant activities. Any activity that has a state or federal applicable requirement shall be considered a significant activity even if this activity meets the criteria of §304 of Regulation 26 or listed in the table below. Insignificant activity determinations rely upon the information submitted by the permittee in an application dated October 21, 2003.

Description	Category
Charcoal Storage	A-13

Section VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. This permit does not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated under the Act. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
3. The permittee will notify the Department in writing within thirty (30) days after commencement of construction, completion of construction, first operation of equipment and/or facility, and first attainment of the equipment and/or facility target production rate. [§19.704 of Regulation #19 and/or A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [§19.410(B) of Regulation #19 and/or §18.309(B) of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
5. The permittee must keep records for five years to enable the Department to determine compliance with the terms of this permit such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Department may use the records, at the discretion of the Department, to determine compliance with the conditions of the permit. [§19.705 of Regulation #19 and/or §18.1004 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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6. A responsible official must certify any reports required by any condition contained in this permit and submit any reports to the Department at the address below. [§19.705 of Regulation #19 and/or §18.1004 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Arkansas Department of Environmental Quality
Air Division
ATTN: Compliance Inspector Supervisor
Post Office Box 8913
Little Rock, AR 72219

7. The permittee will test any equipment scheduled for testing, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) newly constructed or modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) existing equipment already operating according to the time frames set forth by the Department. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. The permittee must submit compliance test results to the Department within thirty (30) days after the completion of testing. [§19.702 of Regulation #19 and/or §18.1002 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
8. The permittee will provide: [§19.702 of Regulation #19 and/or §18.1002 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - a. Sampling ports adequate for applicable test methods
 - b. Safe sampling platforms
 - c. Safe access to sampling platforms
 - d. Utilities for sampling and testing equipment
9. The permittee will operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee will maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [§19.303 of Regulation #19 and/or §18.1104 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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10. If the permittee exceeds an emission limit established by this permit, the permittee will be deemed in violation of said permit and will be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [§19.601 of Regulation #19 and/or §18.1101 of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and the permittee took all reasonable measures to immediately minimize or eliminate the excess emissions.
 - b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.
 - c. The permittee must submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, the information need not be submitted again.

11. The permittee shall allow representatives of the Department upon the presentation of credentials: [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act;
 - c. To inspect any monitoring equipment or monitoring method required in this permit;
 - d. To sample any emission of pollutants; and
 - e. To perform an operation and maintenance inspection of the permitted source.

12. The Department issued this permit in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

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13. The Department may revoke or modify this permit when, in the judgment of the Department, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated the Arkansas Water and Air Pollution Control Act. [§19.410(A) of Regulation #19 and/or §18.309(A) of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
14. This permit may be transferred. An applicant for a transfer must submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated '8 1 106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of the receipt of the disclosure statement. The Department may deny a transfer on the basis of the information revealed in the disclosure statement or other investigation or, deliberate falsification or omission of relevant information. [§19.407(B) of Regulation #19 and/or §18.307(B) of Regulation #18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
15. This permit shall be available for inspection on the premises where the control apparatus is located. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
16. This permit authorizes only those pollutant emitting activities addressed herein. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
17. This permit supersedes and voids all previously issued air permits for this facility. [Regulation #18, Regulation #19, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
18. The permittee must pay all permit fees in accordance with the procedures established in Regulation No. 9. [A.C.A §8-1-105(c)]

