STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0196-AR-11 AFIN: 30-00009

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Halliburton Energy Services, Inc. - Magnet Cove Plant
1743 Darby Lane
Malvern, Arkansas 72104

3. PERMIT WRITER:

Sterling Powers

4. NAICS DESCRIPTION AND CODE:

NAICS Description: All Other Miscellaneous Chemical Product and Preparation Manufacturing
NAICS Code: 325998

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
11/4/2025	De Minimis	• Add Big Bag Dumping Station • Revise IA List • Remove Subpart OOO from Permit

6. REVIEWER'S NOTES:

Halliburton Energy Services, Inc. has a facility at Magnet Cove, Arkansas. This facility manufactures organophilic clay products for use in the oil and gas industry. This permit modification proposes to:

- add a new unit SN-27 to the Extruder process, to be known as the Big Bag Dumping Station. This unit will include a dust collector and will allow the facility to add clay in various sized bags, and does not increase the rate of the Extruder process;
- To rename the natural gas fired boilers on the Insignificant Activities (IA) List to denote what source numbers they were in previous permits and add back to the IA List the source "Raw Material Transfer – Extruder Circuit (SN-08).' This IA unit was not included in the previous permit, an administrative error;
- To remove the specific conditions from the permit from 40 C.F.R. 60 Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants. These conditions, upon review, are not applicable to the organophilic clay used by the facility, as nonmetallic mineral mixtures that consist of less than 50% nonmetallic minerals do not qualify as nonmetallic minerals according to the definitions listed in § 60.670.

Permitted emissions will increase by 0.2 tpy PM and 0.2 PM_{10}.

Discussion of 40 CFR 60, Subpart OOO

Under 40 CFR § 60.671, a "nonmetallic mineral processing plant" is defined as equipment used to "crush or grind any nonmetallic mineral." The regulation specifically lists 18 minerals, including Bentonite and Kaolin, as regulated materials. Furthermore, an "affected facility" under this subpart only includes equipment, such as grinding mills and crushers, that process these specific minerals.

While this facility utilizes Bentonite and Kaolin as raw materials, these minerals undergo a fundamental chemical transformation prior to reaching the size-reduction stage. Before the materials enter the mills, they react with amines. In this chemical process, both the Bentonite and Kaolin act as limiting reagents and are completely consumed.

The resulting material is a new chemical product (e.g., an organoclay) that is distinct from the 18 minerals listed in the NSPS Subpart OOO definition. Because the reaction is complete before the milling stage, no Bentonite or Kaolin remains to be crushed or ground.

Because the size reduction occurs only after the minerals have been chemically transformed into non-regulated substances, the mills do not meet the definition of a "grinding mill" or "crusher" that is "processing nonmetallic minerals" as defined in § 60.671. Therefore, the equipment at this facility does not constitute an "affected facility" and is not subject to the requirements of Subpart OOO.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The last inspection was 12/19/2018, no violations were identified.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? N
- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
17	VOC, CO, NO_x, and PM	40 CFR Part 60, Subpart IIII

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Methyl Chloride	103.3	11.4	0.02	Y
Benzyl Chloride	5.18	0.57	0.04	Y

15. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
01 - 03	Tanks 4.0	N/A			Based on throughput
10	AP-42 Table 11.24-2	PM: 0.12 lb/ton	Dust collector	85%	Emission factor from AP-42 Table 11.23-1 3.5 tons/hr

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equipment Efficiency	Comments
11	AP-42 Table 11.24-2	PM: 0.12 lb/ton	Building enclosure	90%	Emission factor from AP-42 Table 11.23-1 1.8 tons/hr
12	AP-42 Table 11.24-2	PM: 0.12 lb/ton	Building enclosure	85%	1.8 tons/hr
13	AP-42 Table 11.24-2	PM: 0.12 lb/ton		85%	Emission factor from AP-42 Table 11.23-1 2.6 tons/hr
14	testing	95% IPA (VOC) biodegrades			Radian report of April 1998, shows that 95% of IPA is biodegraded and 5% is evaporated into the atmosphere.
15	Tanks 4.0	N/A			Based on throughput
16	AP-42 Natural Gas Section 1.4 IPA Combustion Section 1.5	lb/MMBtu: 0.082 CO 0.098 NO_x 0.0075 PM/PM_{10} 0.0006 SO_2 0.0054 VOC lb/Mgal: 1.9 CO 14 NO_x 0.4 PM/PM_{10}	Thermal Oxidizer	98%	Includes Duratone Circuit & Extruder Circuit Rotary Dryers (4.5 MMBtu/hr & 2.4 MMBtu/hr, respectively)
17	NSPS Limit AP-42	g/kW-hr: 4.0 NO_x 5.0 CO 4.0 VOC 0.3 PM/PM_{10} lb/MMBtu: 0.29 SO_2	None	--	500 hour per year limit 139 BHp fire pump engine
27	AP-42 Table 11.24-2	PM: 0.12 lb/ton	Dust collector	85%	3.5 tons/hr 300 acfm

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
16	VOC	25A	Annually	Verify proper continuing operation of RTOs
10, 11, 13, 16, 27	Opacity	9	Annually	To verify NSPS limits

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
	N/A			

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility	Production at Duratone	19,272 tons per consecutive 12 month period	Monthly	N
Facility	Production at Extruder	15,800 per consecutive 12 month period	Monthly	N
Tanks	Methyl chloride % Benzyl chloride %	0.03% by wt 0.08% by wt	Per inspection of MSDS kept onsite	N
17	Hours of operation	500 hours per calendar year	Monthly	N
		If more than 100 hours during any calendar year, the permittee must verify that the engine still qualifies as an emergency engine	As needed	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility	% wt content of nonmetallic mixture	Shall not exceed 50% wt content of nonmetallic minerals in the organophilic clay	Monthly	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
10, 11, & 13	10%	NSPS Subpart OOO	Design limits & Annual Method 9
16	7%	NSPS Subpart OOO	Proper control operation & Annual Method 9
17	20%	Department guidance	Annual observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Natural Gas Fired Boiler, 4.2 MMBtu/hr (SN-06)	1	0.2	0.1	0.1	1.6	1.9	0.3	0.3
Natural Gas Fired Water Heater, 2.4 MMBtu/hr (SN-07)	1	0.1	0.1	0.1	0.9	1.1	0.2	0.2
Scott Dryer (3.0 MMBtu/hr)	1	0.1	0.01	0.08	1.1	1.3	0.03	0.03
Hammermill Heater (1.0 MMBtu/hr)	1	0.04	0.01	0.1	0.7	0.3	0.01	0.01
A-1 Totals		0.44	0.22	0.38	4.3	4.5	0.10	0.10
10,000 gallon Nonylphenol storage tank	3			0.01			0.01	0.01
185 gallon Diesel storage tank	3			0.01			0.01	0.01
A-3 Totals				0.02			0.02	0.02

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
10,000 gallon Caustic soda storage tank	4			0.14				
Lab Hoods	5			0.04			0.04	0.04
500 gallon Specialty chemical storage tank	13			0.44			0.44	0.44
Unpaved roads	13	1.87 PM 0.47 PM_{10}						
Wastewater Tanks (3 tanks with 17,000 gallon capacity, each)	13			0.02 Each 0.06 Total			0.02 Each 0.06 Total	0.02 Each 0.06 Total
Primary Wastewater Tanks (2 tanks with 42,000 gallon capacity, each)	13			0.06 Each 0.12 Total			0.06 Each 0.12 Total	0.06 Each 0.12 Total
Secondary Wastewater Tanks (2 tanks with 7,000 gallon capacity, each)	13			0.01 Each 0.02 Total			0.01 Each 0.02 Total	0.01 Each 0.02 Total
Lignite Bulk Storage Silo (SN-18)	13	0.05						
Raw Material Transfer – Extruder Circuit – SN-08	13	0.06 PM/PM_{10}						
A-13 Totals		1.98 PM 0.0.58 PM_{10}		0.64			0.64	0.64

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0196-AR-10

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Halliburton Energy Services, Inc. Magnet Cove

Permit Number: 0196-AR-11

AFIN: 30-00009

			Old Permit	New Permit
$/ton factor	28.14	Permit Predominant Air Contaminant	80.2	80.2
Minimum Fee $	400	Net Predominant Air Contaminant Increase	0	
Minimum Initial Fee $	500			
		Permit Fee $	400	
Check if Administrative Amendment	☐	Annual Chargeable Emissions (tpy)	80.2	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	18.5	18.7	0.2
PM_{10}	18.5	18.7	0.2
$PM_{2.5}$	0	0	0
SO_2	0.2	0.2	0
VOC	80.2	80.2	0
CO	4.5	4.5	0
NO_X	10.3	10.3	0
Total HAP	0.21	0.21	0
Methyl Chloride	0.09	0.09	0
Benzyl Chloride	0.12	0.12	0