

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1185-AOP-R14 AFIN: 24-00071

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Black Hills Energy Arkansas, Inc.—Drake Compressor Station
2204 Westview Road
Ozark, Arkansas 72949

3. PERMIT WRITER:

Skylar Redman

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Pipeline Transportation of Natural Gas
NAICS Code: 486210

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
12/15/2023	Renewal	SN-11 and SN-12 are being removed.

6. REVIEWER’S NOTES:

Black Hills Energy Arkansas, Inc.—Drake Compressor Station owns and operates a natural gas compressor station located near Ozark, Arkansas. This permit action is a renewal that removes SN-11 and SN-12 that ceased operation March 31st 2022 with a decrease in 0.2 tpy of SO₂, 5.3 tpy of VOC, 0.5 tpy of CO, 5.8 tpy of NO_x, 0.02 tpy of Acetaldehyde, 0.04 tpy of Acrolein, 0.01 tpy of Formaldehyde, 0.07 tpy of POMs, and an increase in 0.05 tpy of 1,3-Butadiene.

7. COMPLIANCE STATUS:

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

This facility was last inspected on January 04, 2023 with no violations identified.

https://echo.epa.gov/detailed-facility-report?fid=110040990283&ej_type=sup&ej_compare=US

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b) Is the facility categorized as a major source for PSD? Y

- *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.

This permit action is a renewal with no changes to permitted emissions.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-15, SN-18, SN-19, SN-87, SN-88, SN-89, and SN-90	HAP	NESHAP ZZZZ
SN-18	NO _x , CO	NSPS JJJJ
SN-95, SN-96, SN-97, and SN-98	NO _x , CO	NSPS JJJJ

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? Y

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? Y

Source	Applicable Regulation	Description
SN-18	40 C.F.R. Part 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
SN-93 and SN-94	40 C.F.R. Part 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced after September 18, 2015.
Facility	19	Regulations of the Arkansas Plan of Implementation for Air Pollution Control
Facility	26	Regulations of the Arkansas Operating Air Permit Program
Facility	40 CFR Part 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
Varies	40 C.F.R. § 60	New source performance standards
Facility	Reg.19.801	111(d) Designated facilities
Facility	Reg.26.401(g)	Applications for initial Phase II acid rain permits.
Facility	Reg.26.1201	Acid rain sources provisions
Facility	40 C.F.R. § 79	Registration of fuels and fuel additives.
Facility	40 C.F.R. § 80	Registration of fuels and fuel additives.
Facility	40 C.F.R. § 81.304	Non-attainment
Facility	40 C.F.R. Part 60, Subpart OOOOb	Projects commenced construction before the applicability date of the revised rule (December 6, 2022)

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:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), 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?
Acrolein	0.229	0.02519	0.45	N
Formaldehyde	1.5	0.01351	2.32	N
POM	0.20	0.022	0.020	Y

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrolein	2.29	1.39	Y
Formaldehyde	15	6.69804	Y

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards Y

If exempt, explain: The facility does not have H₂S emissions.

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
15 and 87	AP-42	PM/PM ₁₀ : 9.9871E-3 lb/MMBtu SO ₂ : 1.5E-3 lb/MMBtu Acetaldehyde: 8.36E-3 lb/MMBtu Acrolein: 5.14E-3 lb/MMBtu 1,3-butadiene: 2.67E-4 lb/MMBtu Formaldehyde: 5.28E-2 lb/MMBtu POM: 1.61508E-4 lb/MMBtu	Oxidation Catalyst	93%	Control efficiency not used in emission calculations. Annual emissions based on 7,500 hr/yr each.
	Manufacturer's Specifications with safety factors	VOC: 1.0 g/hp-hr CO: 2.5 g/hp-hr NO _x : 2.0 g/hp-hr			
18	AP-42	PM/PM ₁₀ : 1.941E-2 lb/MMBtu SO ₂ : 5.88E-4 lb/MMBtu Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-butadiene: 6.63E-4 lb/MMBtu Formaldehyde: 2.05E-2 lb/MMBtu	None	N/A	Annual emissions based on 100 hr/yr.
	Manufacturer's Specifications with safety factors	VOC: 1.6 g/hp-hr CO: 95.32 g/hp-hr NO _x : 2.52 g/hp-hr			
19 and 89	AP-42	PM/PM ₁₀ : 9.9871E-3 lb/MMBtu SO ₂ : 5.88E-4 lb/MMBtu	Oxidation Catalyst	93%	Control efficiency not

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Acetaldehyde: 8.36E-3 lb/MMBtu Acrolein: 5.14E-3 lb/MMBtu 1,3-butadiene: 2.67E-4 lb/MMBtu Formaldehyde: 5.28E-2 lb/MMBtu POM: 1.61508E-4 lb/MMBtu			used in emission calculations.
	Manufacturer's Specifications with safety factors	VOC: 1.3 g/hp-hr CO: 3.5 g/hp-hr NO _x : 1.95 g/hp-hr			
88	AP-42	PM/PM ₁₀ : 9.9871E-3 lb/MMBtu SO ₂ : 5.88E-4 lb/MMBtu Acetaldehyde: 8.36E-3 lb/MMBtu Acrolein: 5.14E-3 lb/MMBtu 1,3-butadiene: 2.67E-4 lb/MMBtu Formaldehyde: 5.28E-2 lb/MMBtu POM: 1.61508E-4 lb/MMBtu	Oxidation Catalyst	93%	Control efficiency not used in emission calculations.
	Manufacturer's Specifications with safety factors	VOC: 1.2 g/hp-hr CO: 3.18 g/hp-hr NO _x : 1.8 g/hp-hr			
90	AP-42	PM/PM ₁₀ : 1.941E-2 lb/MMBtu SO ₂ : 5.88E-4 lb/MMBtu Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-butadiene: 6.63E-4 lb/MMBtu Formaldehyde: 2.05E-2 lb/MMBtu POM: 2.381E-4 lb/MMBtu	None	N/A	
	Manufacturer's Specifications with safety factors	VOC: 2.75 g/hp-hr CO: 49.5 g/hp-hr NO _x : 12.1 g/hp-hr			
91 and 92	AP-42	PM/PM ₁₀ : 7.6 lb/MMCF SO ₂ : 0.6 lb/MMCF VOC: 5.5 lb/MMCF CO: 84 lb/MMCF NO _x : 100 lb/MMCF Formaldehyde: 7.5E-2 lb/MMCF POM: 6.982E-4 lb/MMCF	None	N/A	SN-92: 0.5 MMBtu/hr
	GlyCalc 4.0	SN-92 VOC: 0.2 lb/hr SN-92 VOC: 0.7 tpy	None	N/A	
95 and	NSPS JJJJ	NO _x : 1.0 g/hp-hr			1900 HP

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
96		CO: 1.5 g/hp-hr VOC: 0.7 g/hp-hr Formaldehyde: 0.05 g/hp-hr	NSCR Catalyst		
	AP-42, 3.2	PM/PM ₁₀ : 0.01941 lb/MMBtu SO ₂ : 5.88E-04 lb/MMBtu Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-Butadiene: 6.63E-4 lb/MMBtu			
97 and 98	NSPS JJJJ	NO _x : 1.0 g/hp-hr CO: 2.0 g/hp-hr VOC: 0.7 g/hp-hr Formaldehyde: 0.05 g/hp-hr	NSCR Catalyst		1500 HP 10.81 MMBtu/hr Natural Gas 4SRB
	AP-42, 3.2	PM/PM ₁₀ : 0.01941 lb/MMBtu SO ₂ : 5.88E-04 lb/MMBtu Acetaldehyde: 2.79E-3 lb/MMBtu Acrolein: 2.63E-3 lb/MMBtu 1,3-Butadiene: 6.63E-4 lb/MMBtu			
99	EPA Protocol for Equipment Leak Emissions Estimates, EPA-453/R-95-017	1% VOC in gas service 100% VOC in water/oil service 0.1% HAPs in gas service 10% HAPs in water/oil service	-	-	

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
SN-15, SN-19, SN-87 through SN-98 (one of each model engine)	CO	10	Every 60 months	Demonstrate compliance with the CO limits.
SN-15, SN-19, SN-87 through SN-98 (one of each model engine)	NO _x	7E	Every 60 months	Demonstrate compliance with the NO _x limits.
SN-18	NO _x , CO	As specified.	One-time	Subpart JJJJ

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)
SN-15 and SN-87	Hours of Operation	15,000 hours per 12-months	Monthly	Y
SN-18	Hours of Operation	100 hours per 12-months; also must comply with 63, Subpart ZZZZ hour limits and document how many hours are for emergency operation and how many hours for non-emergency operation	Monthly	Y
Engines	Fuel Used	Pipeline Quality Natural Gas Only	Continuously	N
SN-15, SN-19, SN-87, SN-88, and SN-89	Remote Engine Evaluation	See Definition of Remote Stationary RICE in 63, Subpart ZZZZ	Annually	N
Engines	Oil Analysis Records [§63.6625(j)]	See §63.6625(j)	Same frequency as specified for changing the oil	N
Engines	Records described in §63.6655(a)(1) through (a)(5), (b)(1) through (b)(3) and (c)	N/A	As Needed	Maybe

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Engines	Records of Maintenance Conducted	Per Maintenance Plan and Table 2d of 40 CFR Part 63, Subpart ZZZZ	As Needed	Y, when did not meet limitation
SN-95 and SN-96	Hours of operation; Hours of operation since rod packing replacement	N/A	Continuously	

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
15, 18, 19, and 87 through 98	5%	Department Guidance	Natural Gas Fuel Only

20. DELETED CONDITIONS:

Former SC	Justification for removal
1	SN-11 and SN-12 were removed.
2	SN-11 and SN-12 were removed.
3	SN-11 and SN-12 were removed.
7	SN-11 and SN-12 were removed.

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
Lubricants(~10)	A-2			0.01			0.01	0.01
Engine & Compressor Oil (8)	A-2			0.01			0.01	0.01
T-1 Condensate	A-3			0.01			0.01	0.01
T-2 Spill Containment	A-3			0.01			0.01	0.01
T-3 Condensate	A-3			0.01			0.01	0.01

Source Name	Group A Category	Emissions (tpy)						
		PM/ PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
T-4 Used Oil	A-3			0.01			0.01	0.01
T-5 Used Oil	A-3			0.01			0.01	0.01
T-6 Lube Oil	A-3			0.01			0.01	0.01
T-7 Lube Oil	A-3			0.01			0.01	0.01
Mercaptan Storage Tanks	A-13			0.01			0.01	0.01
Blowdowns and Venting	A-13			0.4328			0.4328	0.4328
Parts Washer	A-13			0.021			0.021	0.021
A-13 Totals				0.5538			0.5538	0.5538

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 #
1185-AOP-R13

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Black Hills Energy Arkansas, Inc.—Drake
 Compressor Station
 Permit Number: 1185-AOP-R14
 AFIN: 24-00071

\$/ton factor	28.14	Annual Chargeable Emissions (tpy)	333.2
Permit Type	Renewal No Changes	Permit Fee \$	0

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	-11.3
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		8.1	8.1	0		
PM ₁₀		8.1	8.1	0	0	8.1
PM _{2.5}		0	0	0		
SO ₂		1.7	1.5	-0.2	-0.2	1.5
VOC		131.1	125.8	-5.3	-5.3	125.8
CO		325.3	324.8	-0.5		
NO _x		203.6	197.8	-5.8	-5.8	197.8

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Acetaldehyde	<input type="checkbox"/>	2.32	2.31	-0.01		
Acrolein	<input type="checkbox"/>	1.7	1.67	-0.03		
1,3-Butadiene	<input type="checkbox"/>	0.2	0.25	0.05		
Formaldehyde	<input type="checkbox"/>	9.63	9.63	0		
POM	<input type="checkbox"/>	0.11	0.04	-0.07		
Total HAPs	<input type="checkbox"/>	16.49	16.49	0		