

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1310-AOP-R4 AFIN: 24-00090

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Black Hills Energy Arkansas, Inc. - Davis Compressor Station  
8521 Fairhaven Road  
Altus, Arkansas 72821

3. PERMIT WRITER:

Ann Sudmeyer

4. NAICS DESCRIPTION AND CODE:

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

5. ALL SUBMITTALS:

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
4/21/2017	Administrative Amendment	N/A

6. REVIEWER'S NOTES:

Black Hills Energy Arkansas, Inc. - Davis Compressor Station operates a natural gas transmission station (NAICS 486210) located at 8521 Fairhaven Road Altus, Franklin County, Arkansas 72821. This permitting action is necessary to change the name from SourceGas Arkansas Inc. (Davis Compressor Station) to Black Hills Energy Arkansas, Inc. - Davis Compressor Station. In addition, the contact information was updated. No other changes or items were reviewed

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 20, 2016 and was found to be in compliance.

8. PSD 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? N

- *Single pollutant  $\geq 100$  tpy and on the list of 28 or single pollutant  $\geq 250$  tpy and not on list*

If yes, explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01-04	CO & NO <sub>x</sub>	NESHAP 40 CFR Part 63 Subpart ZZZZ
05	Benzene	NESHAP 40 CFR Part 63 Subpart HHH

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. AMBIENT AIR EVALUATIONS:

a) Reserved.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated in a previous permit. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1<sup>st</sup> 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<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
1,3-Butadiene	4.42	0.4862	0.0114	Yes
Acrolein	0.229	0.0252	0.108	No
Formaldehyde	1.5	0.165	0.7666	No

The above information was obtained from the statement of basis for 1310-AOP-R3.

2<sup>nd</sup> 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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Acrolein	2.29	0.693	Yes
Formaldehyde	15.0	4.923	Yes

The above information was obtained from the statement of basis for 1310-AOP-R3.

c) H<sub>2</sub>S 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 H<sub>2</sub>S Standards N/A  
 If exempt, explain: \_\_\_\_\_

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H <sub>2</sub> S	20 parts per million (5-minute average*)	N/A	N/A
	80 parts per billion (8-hour average) residential area	N/A	N/A

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
	100 parts per billion (8-hour average) nonresidential area	N/A	N/A

\*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

$C_p$  = 5-minute average concentration

$C_m$  = 1-hour average concentration

$t_m$  = 60 minutes

$t_p$  = 5 minutes

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01-02	Ajax Manufacturer's Data (July 21, 1989)  AP-42 3.2	<u>g/hp-hr</u> VOC= 1.5 CO= 1.0 NO <sub>x</sub> = 4.0 <u>lb/MMBtu</u> PM/PM <sub>10</sub> = 0.0384 SO <sub>2</sub> = 0.000588 1,3-Butadiene= 0.0008 Acrolein= 0.0078 Formaldehyde= 0.0552	None		SI-2S LB 345hp
03-04	Ajax Manufacturer's Data (July 21, 1989)  AP-42 3.2	<u>g/hp-hr</u> VOC= 1.25 CO= 1.0 NO <sub>x</sub> = 15.0 <u>lb/MMBtu</u> PM/PM <sub>10</sub> = 0.0384 SO <sub>2</sub> = 0.000588 1,3-Butadiene= 0.0008 Acrolein= 0.0078 Formaldehyde= 0.0552	None		SI-2S LB 576hp
05	GRI-GLYCalc 4.0  AP-42 1.4	VOC= 0.07 lb/hr=0.30 tpy <u>Lb/MMscf</u> PM=7.6 PM <sub>10</sub> = 0.00004 SO <sub>2</sub> = 0.6	None		0.41 MMBtu

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		VOC= 5.5 CO= 84 NO <sub>x</sub> = 100 Formaldehyde= 7.5E-2			

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 or 02 & 03 or 04	NO <sub>x</sub> CO	7E 10	Once every 5 years	Each type of compressor engine is tested once every 5 years as confirmation of the Permit

14. 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				

15. 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)
01-04	Compliance with the specifications for grains of H <sub>2</sub> S	Contains < 0.5 grains of total sulfur per 100 scf of natural gas	N/A	No. Maintain valid gas tariff; fuel purchase or pipeline transportation contract; vendor certification based on fuel sampling and analysis or other

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
				appropriate documentation; or periodic testing.
05	Facility-wide actual annual average natural gas throughput	less than 28.3 thousand standard cubic meters per day	Annual	No

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01-05	5%	Department Guidance	Natural Gas Usage

17. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
500 Gallon Lube Oil Tank	A-3			0.042			<0.01	<0.01
2,100 Gallon Production Water Tank #1	A-3			<0.001			<0.01	<0.01
2,100 Gallon Production Water Tank #2	A-3			<0.001			<0.01	<0.01
TOTAL	A-3			<0.044			<0.03	<0.03
Blowdown and Venting	A-13			0.012			0.001	0.001
Fugitive Emissions	A-13			1.666			0.008	0.015
TOTAL	A-13			1.678			0.009	0.016

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19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

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## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Black Hills Energy Arkansas, Inc. - Davis Compressor Station  
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\$/ton factor		23.93	Annual Chargeable Emissions (tpy)	221.3
Permit Type	AA		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)	0
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 condensible 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		2.7	2.7	0		
PM <sub>10</sub>		2.7	2.7	0	0	2.7
PM <sub>2.5</sub>		0	0	0		
SO <sub>2</sub>		0.5	0.5	0	0	0.5
VOC		24.1	24.1	0	0	24.1
CO		18.2	18.2	0		
NO <sub>x</sub>		194	194	0	0	194
1,3-Butadiene	<input type="checkbox"/>	0.06	0.06	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Acrolein	<input type="checkbox"/>	0.48	0.48	0		
Formaldehyde	<input type="checkbox"/>	3.37	3.37	0		