STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1362-AOP-R7 AFIN: 24-00092

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Black Hills Energy Arkansas, Inc. - Stockton Compressor Station
South of I-40, West of CR 64, North of Hwy 64
Ozark, Arkansas 72949

3. PERMIT WRITER:

Kyle Crane

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Support Activities for Oil and Gas Operations
NAICS Code: 213112

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
10/1/2018	Renewal	Remove SN-02 and SN-12, update natural gas sulfur content limit

6. REVIEWER'S NOTES:

Black Hills Energy Arkansas, Inc. - Stockton Compressor Station operates a natural gas transmission pipeline compressor station near Ozark, Arkansas. This permitting action is necessary to:

- Renew the facility's operating permit;
- Remove SN-02 (Waukesha compressor engine) and SN-12 (glycol dehydrator) from the permit;

- Update emission calculations for all sources based on 0.5 grains per 100 scf natural gas sulfur content;
- Update applicable and inapplicable regulations included under the permit shield;
- And update the facility's insignificant activity list.

The permit's general provisions were also updated. Annual permitted emissions increase by 0.6 tons per year (tpy) of CO and 0.67 tpy of Total HAPs with this renewal. Annual permitted emissions decrease by 0.1 tpy of SO_2, 3.9 tpy of VOC, and 0.9 tpy of NO_X with this renewal.
Dispersion modeling was performed with AERMOD v18081 using Lakes Environmental AERMOD View 9.5.0. Emissions were calculated using AP-42, mass balances, and GRI-GLYCalc 4.0.

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 June 21, 2018 and was found to be in compliance. ECHO shows "Unknown" for Air Compliance Status.

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)
01, 03, and 04	CO, NO_X	NESHAP 40 C.F.R. § 63 Subpart ZZZZ

10. 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 Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? Y
If not, explain why.

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
Facility	19.801	111(d) Designated facilities – The facility is not identified in the list of regulated sources
Facility	26.401(g)	Applications for initial Phase II acid rain permits – The facility is not an acid rain category source
Facility	26.1201	Acid rain sources provisions – The facility is not an acid rain source
Facility	40 C.F.R. Part 68	Chemical Accidental Release Program – The facility does not store a regulated substance above a threshold quantity
Facility	40 C.F.R. Part 79	Registration of fuels and fuel additives – The facility is not in this source category
Facility	40 C.F.R. Part 80	Registration of fuels and fuel additives – The facility is not in this source category
Facility	40 C.F.R. 81.304	Attainment Status of Designations – The facility is not located in a nonattainment area s of the effective date of this permit
01, 03, and 04	40 C.F.R. Part 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines – The engines are not compression ignition engines
01, 03, and 04	40 C.F.R. Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines – The engines were manufactured before June 2006
Facility	40 C.F.R. Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015 – The facility is part of the natural gas transmission and storage source category and no equipment except for tanks are potentially subject to this rule. The existing tanks have not been constructed, modified, or reconstructed during the applicable time period
Facility	40 C.F.R. Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which

Source	Inapplicable Regulation	Reason
		Construction, Modification, or Reconstruction Commenced After September 18, 2015 – Equipment subject to the rule, or that could become subject, have not been constructed, modified, or reconstructed during the applicable time period
Facility	40 C.F.R. Part 63 Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities – The facility is part of the natural gas transmission and storage source category therefore excluded
Facility	40 C.F.R. Part 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities – The facility is not a major source of HAPs

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. 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 ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department 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 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?
1,3-Butadiene	4.424	0.486	0.009	Yes
Acetaldehyde	45.04	4.954	0.199	Yes
Acrolein	0.229	0.025	0.127	No
Benzene	1.597	0.175	0.017	Yes
Formaldehyde	0.368	0.040	1.25	No
Methanol	262.08	28.828	0.070	Yes
n-Hexane	176.237	19.386	0.030	Yes
Toluene	75.362	8.289	0.012	Yes

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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Acrolein	2.29	0.781	Yes
Formaldehyde	15*	7.598	Yes

*ADEQ Allowable PAIL Limit

c) H_2S 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_2S Standards Y
If exempt, explain: The facility does not emit H_2S

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	Waukesha Product Bulletin Dated Aug. 8, 1989 AP-42 3.2-3	VOC= 2.0 g/hp-hr CO= 28.0 g/hp-hr NO_X= 7.0 g/hp-hr Formaldehyde= 0.05 g/hp-hr <u>lb/MMBtu</u> PM= 1.94E-2 PM_{10}= 1.94E-2 SO_2= 1.47E-3 1,3-Butadiene= 6.63E-4 Acetaldehyde= 2.79E-3 Acrolein= 2.63E-3 POM= 1.41E-4 Total HAP= 2.65E-2	None		SI-4SRB, 587 HP
03, 04	Waukesha Product Bulletin Dated Aug. 8, 1989 AP-42 3.2-2	VOC= 1.0 g/hp-hr CO= 2.7 g/hp-hr NO_X= 1.5 g/hp-hr <u>lb/MMBtu</u> PM= 9.99E-3 PM_{10}= 9.99E-3 SO_2= 1.47E-3 1,3-Butadiene= 2.67E-4 Acetaldehyde= 8.36E-3 Acrolein= 5.14E-3 Formaldehyde= 5.28E-2 POM= 1.62E-4 Total HAP=7.21E-2	None		SI-4SLB, 1478 HP
10	VOC GRI-GLYCalc Combustion AP-42 1.4	VOC=0.03 lb/hr= 0.12 tpy <u>lb/MMscf</u> PM= 7.6 PM_{10}= 7.6 SO_2= 1.5 VOC= 5.5 CO= 84 NO_X= 100 Formaldehyde= 7.5E-2 POM= 6.96E-4 Total HAP= 1.88	None		1.0 MMBtu/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
11	VOC GRI-GLYCalc Combustion AP-42 1.4	VOC=0.01 lb/hr= 0.06 tpy lb/MMscf PM= 7.6 PM_{10}= 7.6 SO_2= 1.5 VOC= 5.5 CO= 84 NO_X= 100 Formaldehyde= 7.5E-2 POM= 6.96E-4 Total HAP= 1.88	None		1.5 MMBtu/hr

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01	CO	10	Every five years	Standard for compressor stations. See Plantwide Condition #8 for details.
	NO_x	7E		
03, 04	CO	10	Every other engine every five years	
	NO_x	7E		

15. 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				

16. 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, 03, and 04	Records required by 63.6655	N/A	N/A	Y
	Maintenance Conducted	N/A	N/A	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 03, 04, 10, 11	5%	Natural Gas Usage	Only Fire Natural Gas

18. DELETED CONDITIONS:

Former SC	Justification for removal
#4-5	SN-02 was removed from service and SN-01 is permitted at capacity so an hours of operation limit and recordkeeping is no longer needed
#22-35	SN-02 was removed from service so the associated NESHAP ZZZZ conditions are no longer needed
#58-59	The recordkeeping exemption from NESHAP HHH is for major sources of HAPs. This facility is an area source of HAPs and is not subject to the subpart.
PW #9	Fugitive emissions accounted for under insignificant activities

19. 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
Lube Oil Drums (4) – 55 gal each	A-2	-	-	<0.01	-	-	-	<0.01
Used Lube Oil Drums (4) – 55 gal each	A-2	-	-	<0.01	-	-	-	<0.01
T-1 Skid Drain Water – 4,700 gal	A-3	-	-	<0.01	-	-	-	<0.01
T-2 Produced Water/Condensate – 5,875 gal	A-3	-	-	<0.01	-	-	-	<0.01

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
T-3 Dehydrator Reboiler Condensate – 2,000 gal	A-3	-	-	<0.01	-	-	-	<0.01
Fugitive Emissions	A-13	-	-	1.2785	-	-	0.0062	0.0118
Blowdowns and Venting	A-13	-	-	0.0097	-	-	0.0097	0.0097

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1362-AOP-R6

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Black Hills Energy Arkansas, Inc. - Stockton Compressor Station
Permit Number: 1362-AOP-R7
AFIN: 24-00092

$/ton factor	23.93	Annual Chargeable Emissions (tpy)	114.8
Permit Type	Minor Mod	Permit Fee $	500

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	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	-4.9
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		1.6	1.6	0		
PM_{10}		1.6	1.6	0	0	1.6
$PM_{2.5}$		0	0	0		
SO_2		0.6	0.5	-0.1	-0.1	0.5
VOC		41.7	37.8	-3.9	-3.9	37.8
CO		201.4	202	0.6		
NO_X		75.8	74.9	-0.9	-0.9	74.9
Total HAPs	☐	6.9472	7.61	0.6628		