

**Steamboat Butte E5 Tank Battery
Wind River Energy Commission
Wind River Reservation, Fremont County**

**Full Compliance Evaluation (FCE)
Clean Air Act**

Inspection Date: July 24, 2024

Inspection Report Date: December 4, 2024

EPA Representative: Robert (Bob) Gallagher, EPA – Region 8

Tribal Representatives: Dean Goggles (Northern Arapaho), (307) 438-2163

Company Representatives: Wind River Energy Commission and their
Subcontractor MI3 Petroleum Engineering

- Ed Pearson, Director of Operations (via Zoom)
- Justin Lajeunesse, Production Superintendent
- John Kennah, Team Lead

Inspection Report Prepared By: Robert (Bob) Gallagher

Inspection Report Reviewed By: Scott Patefield

Last CAA Inspection: August 7, 2019

Applicable Rules: Tribal Minor NSR Permit Application
NSPS Subpart OOOO

CAA Permit History:
Part 49 Permit Number: SMNSR-WR-000005-2017.002 Issue Date: January 22, 2019
Part 49 Permit Number: SMNSR-WR-000005-2020.003 Issue Date: October 2, 2020

ICIS Facility ID: AIR08000005601300001

SIC Code: 1311 – Crude Petroleum and Natural Gas

Reservation: Wind River Reservation

Tribes: Northern Arapaho and Eastern Shoshone

SCOTT PATEFIELD Digitally signed by SCOTT
PATEFIELD
Date: 2024.12.04 14:06:13 -07'00'

General Source Information

Parent Company Name: Wind River Energy Commission (WREC)

Plant Name: Steamboat Butte E5 Tank Battery

Plant Mailing Address: PO Box 538
Ft. Washakie, Wyoming 82514

On-site Office: 14567 Highway 287
Ft. Washakie, Wyoming 82514

Plant Location: Latitude 43.26592° N
Longitude -108.90416 ° W

County, State: Fremont, Wyoming

Responsible Official: Ed Pearson

Overall Inspection Findings

The WREC facility was operational during the inspection. There were numerous areas of concern noted during the inspection. Also, no compliance assistance was provided during the inspection, however, this inspection report will be provided to WREC upon finalization.

The following areas of concern were noted during the inspection, including;

- annual emissions and annual fees that were due in 2023 and 2024 were not submitted (Condition I.H.1)
- since January of 2023, no monthly inspections were conducted on the flares, on the tank covers, or closed vent systems (Condition I.E.2(a))
- the flares were not equipped with monitoring systems (Condition I.D.4)
- permit application for new ownership had not been submitted to EPA

Enforcement History

No previous enforcement actions were found in the ICIS database.

Description of Process

The Steamboat Butte E5 tank battery operates continuously 8,760 hours per year. It handles 800 barrels per day of crude oil, 35,000 barrels of produced water, and 0.144 MMscfd of gas which may contain up to 5.00% of H₂S.

Production from the wells enters the facility through two inlet free water knockouts (FWKO). From the FWKOs, oil is sent to the bulk treater (ES HT-1) for secondary separation of the gas, oil, and produced water. Produced water from the FWKOs and bulk treater is sent to two

1,500-barrel storage tanks (E5 WTK-01 & E5 WTK-02) and then is either routed to water injection wells or trucked to offsite surface water discharge ponds. Produced gas is routed to the process flare (FL-1). Vapors from the two produced water tanks are vented to atmosphere.

All oil exiting the bulk treater is routed to 500-barrel Run Tanks (E5 Run Tank) and then released for custody transfer via a LACT unit. During abnormal operating conditions, reject or overflow oil is directed to either Reject Tank (E5 Reject Tank) or Overflow Tank (E5 Reject Tank).

Vapors from the crude oil tank, overflow tank, and reject tank are controlled by the tank flare (FL-2). Gas flashed off the bulk treater is routed to the process flare (FL-1). Vapors from the produced water tanks are vented to atmosphere.

Additionally, one pop & rupture tank is used to store liquids from the FWKOs during upset conditions. These tanks vent to atmosphere.

Equipment List

Summary of Equipment			
Equipment ID	Equipment Description	Capacity / Design Rate	Control ID
FL-1	Process Flare (1996)		
FL-2	Tank Flare (1996)		
E5HT-1	E5 Bulk Treater	292 bbl	FL-1
E5 Run Tank	E5 Crude Oil Run Tank	500 bbl	FL-2
E5 Overflow Tank	E5 Crude Oil Overflow Tank	500 bbl	FL-2
E5 Reject Tank	E5 Crude Oil Reject Tank	500 bbl	FL-2
E5WTK-01	E5 Produced Water Tank #1	1,500 bbl	None
E5WTK-02	E5 Produced Water Tank #2	1,500 bbl	None
E5 Drip Tank	E5 Flare Knockout Tank	606 bbl	None
E5 PR Tank	E5 Pop & Rupture Tank	1,000 bbl	None
E5B-1	E5 Bulk Treater	2.7 MMBTU/hr	None
E5 LOAD	E5 Drip Tank Truck Loading		None
FUG-1	Process Fugitives		None
MSS-DEGAS	Tank Degassing		None

General Inspection Observations and Commentary

Dean Goggles and I arrived at the WREC Office at 9:10 a.m. Upon arrival at the facility, we met with representatives of the subcontractor MI3 Petroleum Engineering, Ed Pearson, Director of Operations (via Zoom), Justin Lajeunesse, the Production Superintendent, and John Kennah, the Team Lead at Steamboat Butte E5 Tank Battery. Departure time was approximately 11:10 a.m.

Opening Meeting

The EPA and Tribal staff were given a short safety meeting to ensure proper PPE was worn and exit procedures in the event of an emergency. We observed some of the records that were available at the site, including production numbers at E5, which were within the permit limits for the rolling 12-month.

Walk Through Inspection Observations

We traveled to the Steamboat Butte E5 Tank Battery where we observed the two flares (production and tank) operating with no visible emissions at the Tank Battery (see Attachment). Observations were made of all the following emission sources listed.

Records Review/Closing Meeting

WREC provided some of the requested records for our review, but could not provide monthly flare observations, annual emissions calculations, and fee calculations since taking ownership in January 2023.

Uncontrolled Potential to Emit (PTE)

Emission Source	EPN	VOC		NO _x		CO		PM ₁₀		PM _{2.5}		SO ₂		H ₂ S		Benzene		HAP	
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
Process Flare	FL-1	138.03	804.56	--	--	--	--	--	--	--	--	--	--	26.94	118.01	0.12	0.54	8.12	35.55
E5 Crude Oil Run Tank	E5 Run Tank	15.27	9.33	--	--	--	--	--	--	--	--	--	--	2.38	2.71	0.01	0.01	0.92	0.38
E5 Crude Oil Overflow Tank	E5 Overflow Tank	0.16	0.68	--	--	--	--	--	--	--	--	--	--	0.04	0.16	8.28E-05	3.83E-04	0.01	0.03
E5 Crude Oil Reject Tank	E5 Reject Tank	0.16	0.68	--	--	--	--	--	--	--	--	--	--	0.04	0.16	8.28E-05	3.83E-04	0.01	0.03
E5 Produced Water Tank #1	E5 WTK-01	2.74	6.88	--	--	--	--	--	--	--	--	--	--	3.28	3.58	0.01	0.01	0.11	0.23
E5 Produced Water Tank #2	E5 WTK-02	2.74	6.88	--	--	--	--	--	--	--	--	--	--	3.28	3.58	0.01	0.01	0.11	0.23
Flare Knockout Tank	E5 Drip Tank	0.09	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drip Tank Loading	E5 LOAD	15.57	3.80E-06	--	--	--	--	--	--	--	--	--	--	7.97E-04	1.95E-10	1.33E-08	3.28E-15	1.10E-06	2.69E-13
Pop & Rupture Tank	E5 PR Tank	4.58E-04	2.01E-03	--	--	--	--	--	--	--	--	--	--	2.71E-03	0.01	2.30E-06	1.01E-05	1.81E-05	7.94E-05
Bulk Treater Burner	E5B-1	0.02	0.07	0.27	1.20	0.23	1.01	0.02	0.09	0.02	0.09	1.73E-03	0.01	1.84E-05	8.07E-05	5.74E-06	2.51E-05	0.01	0.02
TOTAL EMISSIONS		174.77	628.47	0.27	1.20	0.23	1.01	0.02	0.09	0.02	0.09	1.73E-03	0.01	35.96	128.21	0.16	0.57	9.27	36.48
MAXIMUM OPERATING SCHEDULE		Hours/Day		24		Days/Week		7		Weeks/Year		52		Hours/Year		8760			

Proposed Allowable Emission Rates

Emission Source	Equipment ID	VOC		NO _x		CO		PM ₁₀		PM _{2.5}		SO ₂		H ₂ S		Benzene		HAP	
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
Process Fugitives	FUG-1	1.48	6.48	--	--	--	--	--	--	--	--	--	--	0.26	1.12	0.00	0.00	0.07	0.30
Process Flare	FL-1	2.76	12.09	0.47	2.06	4.03	17.65	0.05	0.24	0.05	0.24	50.64	221.82	0.54	2.36	2.49E-03	0.01	0.16	0.71
Tank Flare	FL-2	0.32	0.24	0.04	0.14	0.32	0.27	4.39E-03	0.01	4.39E-03	0.01	4.81	5.69	0.05	0.06	2.87E-04	1.27E-04	0.02	0.01
E5 Produced Water Tank #1	E5 WTK-01	2.74	6.88	--	--	--	--	--	--	--	--	--	--	3.28	3.58	0.01	0.01	0.11	0.23
E5 Produced Water Tank #2	E5 WTK-02	2.74	6.88	--	--	--	--	--	--	--	--	--	--	3.28	3.58	0.01	0.01	0.11	0.23
Flare Knockout Tank	E5 Drip Tank	0.09	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Drip Tank Loading	E5 LOAD	15.57	3.80E-06	--	--	--	--	--	--	--	--	--	--	7.97E-04	1.95E-10	1.33E-08	3.28E-15	1.10E-06	2.69E-13
Pop & Rupture Tank	E5 PR Tank	4.58E-04	2.01E-03	--	--	--	--	--	--	--	--	--	--	2.71E-03	0.01	2.30E-06	1.01E-05	1.81E-05	7.94E-05
Bulk Treater Burner	E5B-1	0.02	0.07	0.27	1.20	0.23	1.01	0.02	0.09	0.02	0.09	1.73E-03	0.01	1.84E-05	8.07E-05	5.74E-06	2.51E-05	0.01	0.02
Tank Degassing	MSS-DEGAS	1.43	7.17E-04	--	--	--	--	--	--	--	--	--	--	0.35	1.77E-04	7.62E-04	3.81E-07	0.06	3.23E-05
TOTAL EMISSIONS		25.87	26.56	0.78	3.39	4.58	19.93	0.08	0.34	0.08	0.34	55.26	227.52	7.50	9.60	0.03	0.03	0.46	1.21
MAXIMUM OPERATING SCHEDULE		Hours/Day		24		Days/Week		7		Weeks/Year		52		Hours/Year		8760			

Permit History

Ownership Change

Marathon Oil Company sold the facility to Merit Energy effective December 1, 2016. WREC took ownership of the facility starting on January 1, 2023.

Tribal Minor Source Permit Application

WREC (newest owner) had not submitted a Tribal New Source Review Permit application for the Steamboat Butte operations to update the ownership. The previous application submitted by Merit Energy in November of 2018 requested:

- Issuance of synthetic minor permit
- E5 facilities are registered in tribal permit rule
- Separation of facilities to separate permitted sources
- Federally enforceable limits on 2 flares

With the flares as enforceable control devices under NSPS – OOOO and based on physical properties of the produced oil and facility production limitations, the emissions are as follows:

	VOC	SO₂	H₂S
Uncontrolled PTE, tpy	629	0	128
Controlled PTE, tpy	27	228	10

*See the following NSPS – OOOO conditions

Synthetic Minor Source Permit # SMNSR-WR-000005 Issued – January 22, 2019 and October 2, 2020

Review of Minor New Source Review (MNSR) Permit Provisions

I.C.1 Facility-Wide Emissions Limitations

- (a) Annual facility crude oil throughput shall not exceed 292,000 barrels (bbls) of oil per year.
- (b) Annual facility produced water throughput shall not exceed 12,775,000 bbls of produced water per year.
- (c) The volume of gas combusted by the process flare shall not exceed 44.165 million standard cubic feet per year.
- (d) The volume of gas combusted by the tank flare shall not exceed 4.748 million standard cubic feet per year.
- (e) Produced gas H₂S content shall not exceed 50,000 parts per million (ppm) H₂S by volume.

OBSERVATION: Records were observed on-site and monthly numbers had been recorded that would estimate annual emissions below the limits.

Month	E5 Oil Production Rolling 12-month total (bbls)	E5 Process Flare Volume Rolling 12-month total (mscf)
Jul-24	114,332	24,224
Jun-24	113,696	22,608
May-24	111,551	19,987
Apr-24	111,336	17,141
Mar-24	110,836	16,158
Feb-24	110,991	13,967
Jan-24	112,841	12,841
Dec-23	114,922	13,244
Nov-23	115,854	13,493*
Oct-23	117,199	15,408*
Sep-23	118,733	19,332*
Aug-23	118,563	19,416*
Jul-23	117,873	15,576*
Jun-23	118,504	12*
May-23	121,854	396*
Apr-23	120,972	24,224*
Mar-23	122,827	12,324*
Feb-23	123,017	12,324*
Jan-23	107,993	13,039*

*total is based on 12 times the monthly production since records were unavailable for months prior to the facility being acquired by WREC

I.D.1 Requirements for the Separator

- (a) The Permittee shall install and operate no more than one 292 bbl bulk heater treater separator (separator) equipped with no more than one heater limited to a maximum heat input capacity of 2.7 million British thermal units per hour (MMBtu/hr).

OBSERVATION: The number of heater treater separators on-site were verified to correspond with the number and size allowed in the permit.

I.D.2 Requirements for the Crude Oil and Produced Water Storage Tanks

- (a) The Permittee shall install, operate and maintain no more than: one (1) 500 bbl Run Tank used to store crude oil; one (1) 500 bbl reject oil tank used to store rejected oil that does not meet specifications for custody transfer; one (1) 500 bbl oil overflow tank used to store overflow oil when the Run Tank fills to capacity; and two (2) storage tanks used to store produced water, each limited to a maximum storage capacity of 1,500 bbls.

OBSERVATION: The five tanks on-site was verified to correspond with the number allowed in the permit.

I.D.3 Requirements for Closed-Vent Systems: The Permittee shall design, install, continuously operate and maintain closed-vent systems.

OBSERVATION: The closed-vent system was verified to correspond with what is allowed in the permit and no emissions were observed.

I.D.4 Requirements for the Flares

- (a) The Permittee shall design, install, continuously operate and maintain the process flare and tank flare such that the mass content of the uncontrolled VOC emissions from the separator and the crude oil tanks are reduced by at

- least 95.0% by volume.
- (b) The Permittee shall ensure that each flare is designed and operated in accordance with the requirements of 40 CFR 60.18(b) for flares, unless otherwise specified in this permit.
 - (c) The Permittee shall ensure that each flare is:
 - (i) Operated properly per the manufacturer, vendor or Permittee's written instructions at all times that produced natural gas, or gases, vapors and fumes are routed to it;
 - (ii) Designed for and operated with no visible smoke emissions, as determined by the methods specified in Condition E.2.(b) of this permit;
 - (iii) Equipped with one of the following:
 - (A) A continuous burning pilot flame, a thermocouple and a malfunction alarm and notification system if the pilot flame fails; or
 - (B) An operational electronically controlled automatic ignition device that sparks on a continuous cycle; and
 - (iv) Equipped with a monitoring system for continuous measuring and recording of the parameters that indicate proper operation of the flare and the continuous burning pilot flame or electronically controlled automatic ignition device (such as a chart recorder, data logger or similar device). Where sufficient to meet the monitoring requirements in this permit, the Permittee may use a Supervisory Control and Data Acquisition (SCADA) system to monitor and record the required data.

OBSERVATION: Flares were observed to be burning with no visible emissions during the on-site inspection. The flares were **not** equipped with monitoring systems.

I.E.1 Testing and Monitoring for Facility Wide Emission Limitations

OBSERVATION: The facility had the flow monitoring devices to measure production numbers to stay within the limits at the site.

I.E.2 Flares and Closed-Vent Systems

- (a) The Permittee shall at a minimum perform monthly inspections of the flares and closed-vent systems as follows:
 - (i) Inspect the thermocouple and the malfunction alarm and notification system if the pilot flame fails or the electronically controlled automatic ignition device, as applicable, to ensure proper operation;
 - (ii) Perform an auditory, visual, olfactory (AVO) inspection of the closed-vent systems to ensure proper condition and functioning;
 - (iii) Inspect the parameter monitoring system and recorded measurements to ensure proper operation of the flare and monitoring system; and
 - (iv) Respond to any malfunction alarm or other indication of improper flare, closed-vent system or monitoring system operation by following the manufacturer's, vendor's, or Permittee's instructions to identify the cause of the deficiency and make any necessary repairs within 30 days

of identifying the deficient condition to return the flare and monitoring system to compliant operation. All repairs and maintenance activities shall be recorded in a maintenance and repair log and shall be made available for inspection.

- (b) The Permittee shall at a minimum perform monthly visual inspections of the flares to ensure they operate with no visible smoke emissions. If any visible smoke emissions are detected during the monthly inspection or any other time, the Permittee shall take the following actions:
 - (i) The Permittee shall demonstrate that the flare operates with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, using the procedures specified in EPA Method 22 at 40 CFR part 60, appendix A. The observation period shall be 2 hours;
 - (ii) If the flare fails the visual emissions test, the Permittee shall follow the manufacturer's, vendor's, or Permittee's repair instructions to return the flare to compliant operation. All repairs and maintenance activities shall be recorded in a maintenance and repair log and shall be made available for inspection;
 - (iii) Upon return to operation from any repair and maintenance activity, the flare shall pass a Method 22 test; and
 - (iv) If the flare fails a follow up Method 22 test, the Permittee shall repeat the procedures in paragraphs (i) through (iii) of this section, until the flare passes a follow up test.

OBSERVATION: Facility had **no recent monthly inspections** documented at the site.

I.F. Recordkeeping Requirements

OBSERVATION: The facility had the recordkeeping required by the permit at the site.

I.G. Requirements for Records Retention

OBSERVATION: The facility had been following the requirements for records retention.

I.H.1 Requirements for Reporting - Annual Compliance Reports

OBSERVATION: The facility had **not** submitted the annual compliance reports for 2022 and 2023.

New Source Performance Standards

***Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution**

[40 CFR 60.5360 – 60.5499]

§60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?

This section applies to the performance testing of control devices used to demonstrate compliance with the emissions standards for your centrifugal compressor affected facility. You must demonstrate that a control device achieves the performance requirements of

§60.5412(a) using the performance test methods and procedures specified in this section. For condensers, you may use a design analysis as specified in paragraph (c) of this section in lieu of complying with paragraph (b) of this section. In addition, this section contains the requirements for enclosed combustion device performance tests conducted by the manufacturer applicable to both storage vessel and centrifugal compressor affected facilities.

(a) *Performance test exemptions.* You are exempt from the requirements to conduct performance tests and design analyses if you use any of the control devices described in paragraphs (a)(1) through (7) of this section.

(1) A flare that is designed and operated in accordance with §60.18(b). You must conduct the compliance determination using Method 22 at 40 CFR part 60, appendix A-7, to determine visible emissions.

OBSERVATION: Net Heating Values and Tip Velocity values were demonstrated to be in compliance.

Attachment

Photo Log

Attachment Photo Log

Date	Time	Location	File ID		Description
7/24/2024	10:54 AM	Steamboat Butte E5 Tank Battery	P1030833	.jpg	Water Tanks
7/24/2024	10:54 AM	Steamboat Butte E5 Tank Battery	P1030834	.jpg	Production Tanks
7/24/2024	10:55 AM	Steamboat Butte E5 Tank Battery	P1030835	.jpg	Heater Treater
7/24/2024	10:55 AM	Steamboat Butte E5 Tank Battery	P1030836	.jpg	Flare



Photo of Water Tanks



Photo of Production Tanks



Photo of the Heater Treater



Photo of the Flare