



REGION 8

DENVER, CO 80202

**Enerplus - Various Well Sites
Partial Compliance Evaluation (PCE)
On-Site Clean Air Act (CAA) Inspections**

Inspection Date(s): November 5-8, 2023

Inspection Report Date: January 11, 2024

EPA Representatives: [REDACTED], US EPA Region 8, Clean Air Act Inspector
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Tribal Representatives: [REDACTED], MHA Energy
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Company Representatives: None

Inspection Report Prepared By: [REDACTED], US EPA Region 8, Clean Air Act Inspector
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Inspection Report Reviewed By: [REDACTED] Manager, Enforcement and Compliance Assurance
Division, Air and Toxics Enforcement Branch

Applicable Rules: 40 C.F.R Part 49, Subpart K: Federal Implementation Plan for Oil
and Natural Gas Well Production Facilities; Fort Berthold Indian
Reservation (Mandan, Hidatsa and Arikara Nation), North Dakota
(Fort Berthold FIP)

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 (NSPS OOOOa)

Compliance Assistance

None

Enforcement History

Enerplus Resources (USA) Corporation (Enerplus) is subject to the terms of two active Consent
Agreement Final Orders (CAFO): Docket No. CAA-08-2020-0008 and Docket No. CAA-08-2019-

00012. Docket No. CAA-08-2020-0008 was entered on August 13, 2020, and has not been terminated. Docket No. CAA-08-2019-00012 was entered on September 4, 2019, with Bruin E&P Partners, LLC. On June 2, 2021, Enerplus submitted notice that it purchased the entity Bruin E&P Partners, LLC. Enerplus became subject to the terms of the 2019 CAFO thereafter.

Additionally, Enerplus was previously subject to the conditions of a 2011 CAFO, CAA-08-2011-0021, which was terminated July 13, 2021.

Areas of Concern

1. The EPA detected hydrocarbon emissions from the storage tanks at the following well pads:
 - Henry Bad Gun West
 - Wetterhorn
 - Bross
 - Turtles/Butterflies
2. The EPA detected hydrocarbon emissions from an unlit flare at the following well pads:
 - Stewart
 - Igneous
 - Windom
3. The EPA detected unburned hydrocarbon (UBHC) emissions from operating utility flares at the following well pads:
 - Clouds West
 - Leviathan
 - Longs
 - Lizards
4. The EPA detected visible emissions from a flare at the following well pads:
 - Henry Bad Gun West
 - Metals North
 - Cats
 - Oklahoma
 - Music East
 - Duck/Hans
 - Bross
 - Elements East

See Table 1 below for more details regarding inspected locations and Tables 2 & 3 for inspection observation details for all pads. A log of images and videos captured during the inspections is provided in Appendix A.

General Inspection Information

Unannounced well pad inspections were conducted jointly by U.S. EPA and Fort Berthold Indian Reservation (FBIR) Tribal inspectors on November 5-8, 2023, at multiple Enerplus facilities located on the FBIR.

The EPA evaluated each Enerplus well site listed in Table 1 using audio, visual, and olfactory (AVO) inspection methods including the use of an optical gas imaging (OGI) camera and EPA Reference Method 22. At each well pad, inspectors scanned the crude and/or water storage tanks, closed vent system and flares onsite for any detectable emissions. Specifically, inspectors scanned storage tank covers and closed vent systems for hydrocarbon emissions to determine compliance with the Clean Air Act, including the Fort Berthold FIP and NSPS OOOOa.

Each well pad inspection followed the approach below:

1. Record the entry sign of the well pad when available. Survey the entire well pad with OGI camera.
2. Record the number and type of site process equipment such as well heads, tanks, and emission control devices.
3. Record AVO indications of emissions from the storage tanks, closed vent system to the control devices and control devices.
4. Using the OGI camera, survey each process in infrared modes (auto, manual, and/or high-sensitivity modes). Record any uncontrolled emissions with the OGI camera and describe the frequency and magnitude of emissions in the field notebook.
5. Observe control devices (enclosed combustor or utility flare) for visible emissions. If there is visible emissions present, conduct Method 22 and record the observations.
6. Using two OGI cameras, confirm any observations of uncontrolled emissions with another inspector.
7. If there are operators present onsite, share any Areas of Concern.

Table 1 lists general inspection and well pad details for each inspected well pad. The well pad information located in Table 1 is from the North Dakota Industrial Commission (NDIC) well index located online at <https://www.dmr.nd.gov/oilgas/>.

Table 1: Inspection and Well Pad Details of Facilities Inspected November 5-8, 2023						
Date	Arrival Time	Departure Time	Pad Name	Well Name(s)	Latitude	Longitude
11/5/2023	14:36	14:52	Missouri	Fort Berthold 152-94-14D-11-16H	47.97845	-102.668215
11/5/2023	15:07	15:12	Maroon	FB 152-93-7D-6-1H	47.99121	-102.62847
11/5/2023	15:13	15:22	Stewart	FBIR 152-93-18B-19-2H	47.99090	-102.63569
11/5/2023	15:24	15:35	Vermejo	FB 152-93-7C-6-9H	47.99315	-102.63613
11/5/2023	15:41	15:47	Bierstadt	FB 152-94-13A-24-3H	47.99136	-102.64351
11/5/2023	16:40	16:45	Snakes East	Redbelly 152-94-18A-19H TF	47.991	-102.752
11/5/2023	17:07	17:12	Marsupials East	Fool Bear 23-34H, Flyer 152-94-23DH TF	47.96374	-102.66928
11/7/2023	8:09	8:19	Metals East	Nickle, Cobalt, Steel, Zinc, Platinum, Lead, Titanium	47.55935	-102.52870

11/7/2023	8:25	8:42	Igneous	Scoria 147-93-09C-04-22	47.55746	-102.54422
11/7/2023	8:47	9:04	Henry Bad Gun West	Henry Bad Gun 8D-5-1-H	47.55951	-102.55104
11/7/2023	9:19	9:29	Metals North	Zirconium	47.58974	-102.56325
11/7/2023	9:31	9:40	Voigt/Zane	Voigt 32-34H, Zane 32-24H	47.58881	-102.55765
11/7/2023	9:43	9:50	Cats	Persian	47.58631	-102.57241
11/7/2023	9:55	10:00	Ethan Hall	Anna G baker 6B-30-2H TF	47.58762	-102.58219
11/7/2023	10:02	10:17	Oklahoma	FB 148-94-36D-25-2H	47.58746	-102.58875
11/7/2023	10:19	10:31	Windom	Fort Berthold 148-94-36C-25-4H	47.58953	-102.60079
11/7/2023	10:33	10:43	Lincoln	FB 148-94-36C-25-3H	47.58777	-102.60634
11/7/2023	10:44	10:55	Pyramid	Fort Berthold 147-94-2A-11-1H	47.58779	-102.61498
11/7/2023	11:01	11:10	Sneffels	Fort Berthold 147-94-2B-11-3H	47.58892	-102.62442
11/7/2023	11:27	11:36	J.M. Hall	JM Hall 1-19H	47.63120	-102.58470
11/7/2023	11:37	11:40	Music West	Harmony 148-93-18C-07-2H TF	47.63230	-102.58015
11/7/2023	11:43	11:52	Music East	Music 148-93-18D-07-4H TF	47.63311	-102.57422
11/7/2023	11:54	12:05	Duck/Hans	Hans 20-21-H	47.63100	-102.56093
11/7/2023	12:57	13:05	Trees East	Pine 148-94-12D-01-3H	47.64668	-102.59507
11/7/2023	13:06	13:11	Trees West	Oak 148-94-12C-01-1H	47.64698	-102.60175
11/7/2023	13:29	13:34	Peppers	Santaka 148-94-11C-2H-TF	47.64684	-102.61398
11/7/2023	13:49	13:59	Mountains	Denali 148-95-12D-01H-TF	47.64684	-102.71906
11/7/2023	14:00	14:14	Wetterhorn	FB 148-95-13A-24-3H	47.64583	-102.72252
11/7/2023	14:18	14:25	Clouds West	Nimbus 149-94-33D-28H, Cirrus, Alto, Haze, Vapor, Cumulus, Stratus, Fog, Lenticular	47.67479	-102.71067
11/7/2023	14:35	14:49	Bross	Fort Berthold 148-95-23C-14-4H	47.61666	-102.75056
11/7/2023	14:51	14:58	Sunshine	Fort Berthold 148-95-23D-14-1H	47.61877	-102.74125
11/7/2023	14:58	15:05	San Luis	Fort Berthold 148-95-24C-13-1H	47.62056	-102.73338
11/7/2023	15:15	15:25	Belford	FB Belford 148-95-22D-15-10B	47.61591	-102.76393
11/7/2023	15:26	15:45	Yale	Fort Berthold 148-95-27B-34-5H	47.61707	-102.77077
11/8/2023	7:53	8:00	Castle	FB 150-94-3B-10-1H	47.84630	-102.70188
11/8/2023	8:01	8:05	James	FB James 150-94-3B-10-13B	47.84634	-102.69932
11/8/2023	8:18	8:22	Bugs	Beetle 150-94-11C-12H	47.82322	-102.68323
11/8/2023	8:40	8:50	Character	Honor 150-94-06B-18HTF	47.84682	-102.76135
11/8/2023	9:07	9:16	Leviathan	FB Leviathan 151-94-27A-34-12T	47.87516	-102.68926
11/8/2023	9:20	9:22	Anderson	FB 151-94-26B-35-10H	47.87574	-102.68378
11/8/2023	9:23	9:28	Huron	Fort Berthold 151-94-26B-35-1H	47.87595	-102.68011
11/8/2023	9:32	9:47	Longs	FB 151-94-26A-35-4H	47.87461	-102.66880

11/8/2023	9:53	10:10	Elements East	Fire, Water, Furlong	47.89023	-102.71258
11/8/2023	10:38	10:45	Breakfast	Waffle, Ham, Sausage, Bacon	47.90847	-102.72645
11/8/2023	10:49	10:55	Lizards	Komodo 151-94-17A-20H-TF	47.90776	-102.73560
11/8/2023	11:51	12:11	Turtles/ Butterflies	Snapper 152-94-33C-28H	47.93611	-102.73224
11/8/2023	12:22	12:29	Turtle East	Leather back 152-94-33C-28H	47.93559	-102.716192

Observations and Regulatory Applicability

Fort Berthold FIP and NSPS OOOOa regulations which are potentially relevant to the Areas of Concern observed during inspections are summarized in this section.

Tables 2 and 3 at the end of this report summarize inspection observations and findings. Table 2 summarizes storage tank observations. Table 3 includes details of control devices and related observations. See Appendix A for a log of images and videos taken during the inspections.

Fort Berthold FIP Applicability

Based on drilling information reported to the NDIC well index by Enerplus, the facilities listed in Table 1 were completed after the August 12, 2007, applicability date (per 40 C.F.R. § 49.4161) and are producing from the Bakken Pool (per 40 C.F.R § 49.4163(a)(1)) and are thus subject to the Fort Berthold FIP.

Closed Vent System Equipment Requirements [§ 49.4165(b)]

Per § 49.4165(b)(1), “Each closed-vent system must route all produced natural gas and natural gas emissions from production and storage operations to the natural gas sales pipeline or the control devices...”. The EPA, using an OGI camera, detected natural gas emissions from production and storage tanks at four out of forty-seven well pads evaluated. See Area of Concern #1 above.

Utility Flare Requirements [§ 49.4165(c)]

Per § 49.4165(c)(6)(vi), “The owner or operators must ensure that each enclosed combustor and utility flare is maintained in a leak-free condition.” The EPA, using an OGI camera, detected emissions from an unlit flare at three out of forty-seven wells pads evaluated. See Area of Concern #2 above.

Per § 49.4165(c)(1), “For each enclosed combustor or utility flare, the owner or operator must follow the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions.” The EPA noted UBHC emissions indicating poor air pollution control practices from lit flares at four out of forty-seven well pads evaluated. See Area of Concern #3 above.

Per § 49.4165(c)(6)(vii), “The owner or operator must ensure that each enclosed combustor and utility flare is operated with no visible smoke emissions.” Per 49.4166(g)(3) and EPA Reference Method 22, the EPA noted black smoke emissions at eight out of forty-seven well pads evaluated. See Area of Concern #4 above.

NSPS OOOOa Applicability

Based on Enerplus’ NSPS OOOOa annual reporting, the EPA believes that storage vessels and associated emissions control equipment at 31 of the 47 oil and natural gas production facilities identified in Table 1 are potentially subject to requirements for storage vessel affected facilities in NSPS OOOOa:

- Anderson

- Belford
- Bierstadt
- Breakfast
- Bross
- Bugs
- Cats
- Clouds West
- Duck/Hans
- Elements East
- Ethan Hall
- Igneous
- James
- Leviathan
- Lincoln
- Lizards
- Longs
- Marsupials East
- Metals East
- Metals North
- Missouri
- Oklahoma
- Peppers
- Pyramid
- Snakes East
- Sneffels
- Stewart
- Turtles East
- Vermejo
- Wetterhorn
- Windom

Closed Vent System Equipment Requirements [§ 60.5411a(c)]

Per § 60.5411a(c)(1), owners and operators must “Design the closed vent system to route all gases, vapors, and fumes emitted from the material in the storage vessel to a control device that meets the requirements specified in § 60.5412(c) and (d), or to a process.” The EPA, using an OGI camera, observed emissions from the closed vent systems at the Wetterhorn and Bross pads. See Area of Concern #1 above.

Control Device Requirements [§§ 60.5412a(d) and 60.5413a(e)]

Per § 60.5412a(d)(1)(ii), owners and operators must, for each combustion control device, “install and operate a continuous burning pilot flame.” The EPA observed unlit pilot flames at the Stewart, Igneous, and Windom pads. See Area of Concern #2 above.

Per § 60.5413(a)(e)(8), owners and operators must, “Operate each control device following the manufacturer’s written operating instructions, procedures and maintenance schedules to ensure good air pollution control practices for minimizing emissions.” The EPA noted UBHC emissions indicating poor

air pollution control practices from lit flares at the Clouds West, Leviathan, Longs, and Lizards pads. See Area of Concern #3 above.

Per § 60.5412a(d)(1)(iii), owners and operators must, “Operate the combustion control device with no visible emissions, except for periods not to exceed a total of 1 minute during any 15-minute period.” The EPA observed black smoke continuously for more than five minutes (per Method 22) at the Metals North, Cats, Oklahoma, Duck/Hans, Bross, and Elements East pads. See Area of Concern #4 above.

Table 2: Inspection Details: Storage Tank Observations					
Well Pad Name	Number of Storage Tanks	AVO (Audio, visual, olfactory) Observations	Emissions Description	Media File Name	Notes
Missouri Pad	16	None	None	None	
Maroon Pad	5	None	None	DC_3342	
Stewart Pad	15	None	None	DC_3345, IR_3348	Confirmed tank levels with OGI
Vernejo Pad	12	None	None	IR_3351	Confirmed tank levels with OGI
Bierstadt Pad	10	Odor detected	None	IR_3354	Confirmed tank levels with OGI
Snakes East Pad	Not recorded	None	None	None	
Marsupials East Pad	4	None	None	None	
Metals East Pad	10	None	None	None	
Igneous Pad	12	None	None	None	
Henry Bad Gun West Pad	12	Odor detected	Intermittent emissions from produced water tank	MOV_3390	
Metals North Pad	8	None	None	None	
Voigt/Zane Pad	10	Odor detected next to tanks	None	None	
Cats Pad	10	None	None	None	
Ethan Hall Pad	16	None	None	None	
Oklahoma Pad	18	None	None	None	
Windom Pad	16	None	None	None	
Lincoln Pad	10	None	None	None	
Pyramid Pad	22	None	None	None	
Sneffels Pad	12	None	None	None	
JM Hall Pad	6	None	None	None	
Music West Pad	8	None	None	None	
Music East Pad	8	None	None	None	
Duck/Hans Pad	9	None	None	None	
Trees East Pad	8	None	None	None	
Trees West Pad	8	None	None	None	
Peppers Pad	6	None	None	None	
Mountains Pad	5	None	None	None	

Wetterhorn Pad	14		Odor detected	Continuous large plume of emissions venting from thief hatch.	MOV_3393, MOV_3394	
Clouds West Pad	11		None	None	None	
Bross Pad	12		Odor detected	Continuous large plume of emissions venting from top of tank, possibly tank 1465.	MOV_3397, MOV_3398	An Enerplus employee was notified of Bross Pad tank emissions at an adjacent pad and said that the tanks recently underwent maintenance due to issues maintaining proper tank levels.
Sunshine Pad	12		None	None	None	
San Luis Pad	14		None	None	None	
Belford Pad	14		Odor detected	None	None	
Yale Pad	12		None	None	None	
Castle Pad	10		None	None	None	
James Pad	12		None	None	None	
Bugs Pad	6		None	None	None	
Character Pad	22		None	None	None	
Leviathan Pad	11		None	None	None	
Anderson Pad	12		None	None	None	
Huron Pad	14		None	None	None	
Longs Pad	10		None	None	None	
Elements East Pad	8		None	None	None	
Breakfast Pad	6		None	None	None	
Lizards Pad	4		None	None	None	
Turtles/ Butterflies Pad	30		None	Continuous venting emissions from piping on top of the tank 998654. Inspectors observed a medium sized continuous plume. Due to wind, video may minimize extent of the leak. Another continuous emission point was observed by inspectors from a thief hatch near the middle of the tank battery. Enerplus employee Donald fixed the thief hatch leak while inspectors were on-site. Inspectors confirmed the thief hatch was no longer leaking.	MOV_3429. MOV_3430	Spoke to operator while onsite.
Turtles East	7		None	None	None	

Table 3: Inspection Details: Control Devices and AVO/OGI Observations

Well Pad Name	Number of Control Device(s)	Control Device (CD) Type	Visible Pilot Flame (Y/N)	Active Flaring (Y/N)	Method 22 Observations	Emission Description	Media File Name	Slope to K/O Drum	Notes
Missouri Pad	2	High Pressure (HP) Tri-tip, Air assist	Yes, No	No, No	None	None	None	Downward	
Maroon Pad	1	Low Pressure (LP)-HP	Yes	No	None	None	None	Downward	The facility was under "Frac Protect".
Stewart Pad	1	LP-HP	No	No	None	Continuous emissions from unlit flare, detected odor	MOV_3347	Downward	The facility was under "Frac Protect".
Vermejo Pad	1	LP-HP	No	No	None	None	MOV_3350, MOV_3351	Downward	The facility was under "Frac Protect".
Bierstadt Pad	1	HP	No	No	None	None	None	Upward	
Snakes East Pad	2	HP, HP Tri-tip	Yes, Yes	Yes, Yes	None	Active flaring (observed high volumes from both flares ~4ft of flame)	None	Downward	The site was inaccessible, so inspection of flares was conducted outside of the fence line.
Marsupials East Pad	2	High Capacity (HC) 2-prong, HP	Yes, Yes	Yes, Yes	None	Unburnt hydrocarbon trails were observed from both flares	MOV_3359	Downward	
Metals East Pad	2	HP 3-prong, LP 2-prong	Yes, Yes	Yes, Yes	None	None		Downward	
Igneous Pad	2	LP, HP 3-prong	Yes, No	Yes, No	None	Possible continuous plume detected by OGI from a potentially unlit flare (HP-3 prong)	MOV_3389	Downward	

Henry Bad Gun West Pad	1	HP	Yes	Yes	Yes	Yes	Continuous visible emissions for >5 minute per Method 22.	None	Downward	
Metals North Pad	2	HP 2-prong, LP 2-prong	Yes, Yes	Yes, Yes	Yes	Continuous visible emission from LP flare for >5 minute per Method 22.	None	None	Downward	
Voigt/Zane Pad	1	HP-LP	Yes	Yes	None	None	None	None	Downward	
Cats Pad	2	HP 2-prong, LP	No, Yes	No, Yes	Yes	Continuous visible emissions from LP flare for >5 minute per Method 22.	None	None	Downward	
Ethan Hall Pad	3	HP 2-prong, LP 2-prong, LP 2-prong	Yes, Yes, Yes	Yes, Yes, Yes	None	None	None	None	Downward	
Oklahoma Pad	1	HP-LP	Yes	Yes	Yes	Continuous visible emissions from HP-LP flare for >5 minute per Method 22.	None	None	Downward	Flare operating temperature was observed to be 441 ° F.
Windom Pad	2	Air Assist, HP-HC	Yes, Yes	No, No	None	Observed emissions from unlit Air Assist flare (it was unlit at the time of the arrival), the OGI video shows when the pilot is lit. Trailing unburned hydrocarbon was observed after the flare lit.	MOV_3391, MOV_3392	None	Downward	
Lincoln Pad	1	HC-LP	Yes	Yes	None	None	None	None	Downward	
Pyramid Pad	3	Air Assist, HP, HP-LP	Yes, Yes, Yes	Yes, No, Yes	None	None	None	None	Downward	

Sneffels Pad	2	HC, Air Assist	Yes, Yes	No, No	None	None	None	Downward	
JM Hall Pad	1	HC	Yes	Yes	None	None	None	Downward	
Music West Pad	1	LP	Yes	Yes	None	None	None	Downward	
Music East Pad	1	HC	Yes	Yes	Yes	Continuous visible emissions from HC flare for >5 minute per Method 22.	DSCN0090.JPG	Upward	Nikon image of pipe slope to flare. Hissing sound audible from flare.
Duck/Hans Pad	2	HP 2-prong, LP	Yes, Yes	Yes, Yes	Yes	Continuous visible emissions from LP flare for >5 minute per Method 22.			Hissing sound audible from flare. Operating temperatures were 1300, 1500, and 1600 degrees Fahrenheit as observed on the flare control panels.
Trees East Pad	1	LP	Yes	Yes	None	None	None	Downward	
Trees West Pad	1	LP	Yes	Yes	None	None	None	Downward	
Peppers Pad	2	HP 3-prong, LP 2-prong	Yes, Yes	No, Yes	None	None	None	Downward	
Mountains Pad	2	HP-LP, HP 2-prong	Yes, Yes	Yes, No	None	None	None	Downward	
Wetterhorn Pad	1	HP-LP	Yes	No	None	None	None		
Clouds West Pad	2	HP 3-prong, LP 2-prong	Yes, Yes	No, Yes	None	UBHC Trail from LP Flare	MOV_3396		Odor detected
Bross Pad	1	HP-LP	Yes	Yes	Yes	Continuous visible emissions from HP-LP flare for >5 minute per Method 22.		Downward	Flare was also "burping". The burning was not continuous and would decrease almost to a level of not flaring at all, and then the flame size would suddenly and dramatically increase.

Sunshine Pad	1	HP-LP	Yes	Yes	None	None	Downward	
San Luis Pad	1	HC-LP	Yes	Yes	None	None		
Belford Pad	2	HP 3-prong, Air Assist	Yes, No	Yes, No	None	None	Downward	
Yale Pad	1	HC-LP	Yes	No	None	None	Downward	
Castle Pad	1	HC	Yes	No	None	None	Downward	
James Pad	2	HP 2-prong, Air Assist	Yes, Yes	No, Yes	None	None	Downward	
Bugs Pad	2	HP 3-prong, LP 2-prong	Yes, Yes	Yes, Yes	None	None	Downward	
Character Pad	1	HC	Yes	Yes	None	None	Downward	
Leviathan Pad	3	Air Assist, HC, HP 4-prong	Yes, Yes, Yes	No, No, No	None	Pilot is lit but not combusting. Puffs of unburned hydrocarbon was observed via OGI from HP 4-prong flare. The operating temperature was 1300F.	Downward	MOV_3406, DC_3405, DC_3407, DC_3408
Anderson Pad	2	HP, Air Assist	Yes, Yes	Yes, No	None	None	Downward	
Huron Pad	1	HP-LP	No	No	None	None	Downward	
Longs Pad	2	Air Assist, HP 3-prong	Yes, Yes	No, No	None	UBHC emissions from air assist flare. Pilot was lit but no flame was visible, there was no heat signature, and the gas was not being combusted. There was no green light indicating proper operations. Alarm	Downward	MOV_3413
Inspectors shared the OGI findings with Enerplus employees on-site and Enerplus employees began troubleshooting at that time.								

Elements East Pad	2			Yes, Yes	Yes, Yes	Yes	lights were red. The pilot temperature was 850°F.	None	Downward	
Breakfast Pad	3			Yes, Yes, Yes	HP 2-prong, HP 4-prong, Air Assist	None	Continuous smoking from a large flame (2~3 ft) for >5 minute per Method 22.	None	Downward	
Lizards Pad	2			Yes, Yes	LP, HP 2-prong	None	Continuous venting from HP flare tip. Pilot is lit but no flame is visible, no heat trail is visible on OGI camera. Small and continuous plume.	MOV_3420	Downward	
Turtles/ Butterflies Pad	2			Yes, Yes	HC-LP, HC-LP	None	None		Downward	
Turtles East Pad	3			Yes, Yes, Yes	LP 4-prong, HP 3-prong, HP 3-prong	None	None		Downward	LP flare had a large flame (5-6 ft), loud roaring operation. HP not flaring and/or was minimally flaring.

APPENDIX A: Photograph and Video Log

File Name	Description	Well Pad
DC 3340.JPG	Entry Sign photo	Missouri Pad
DC 3342.JPG	Entry Sign photo	Maroon Pad
DC 3343.JPG	Tank Battery ID photo	Maroon Pad
DC 3344.JPG	Entry Sign photo	Stewart Pad
DC 3345.JPG	Tank Battery ID photo	Stewart Pad
IR 3346.JPG	Still OGI image of continuous emissions from unlit flare	Stewart Pad
MOV 3347.MP4	OGI video of continuous emissions from unlit flare	Stewart Pad
IR 3348.JPG	Confirmation of liquid levels in storage tanks	Stewart Pad
DC 3349.JPG	Entry Sign photo	Vermejo Pad
MOV 3350.MP4	OGI video of flare operations and tank levels.	Vermejo Pad
MOV 3351.MP4	OGI video of flare operations.	Vermejo Pad
DC 3353.JPG	Entry Sign photo	Bierstadt Pad
IR 3354.JPG	Still OGI image confirming liquid levels in storage tanks	Bierstadt Pad
DSCN0031.JPG	“Site Release In Effect” notice sign at site entry	Marsupial East Pad
DSCN0032.JPG	Entry Sign photo	Marsupial East Pad
MOV 3359.MP4	UBHC trail from flares	Marsupial East Pad
DSCN0073.JPG	Entry Sign photo	Metals East Pad
DSCN0074.JPG	Entry Sign photo	Igneous Pad
MOV 3389.MP4	OGI video of possible continuous emissions from potentially unlit flare.	Igneous Pad
DSCN0075.JPG	Entry Sign photo	Henry Bad Gun West Pad
MOV 3390.MP4	Intermittent emissions from produced water tank	Henry Bad Gun West Pad
DSCN0076.JPG	Entry Sign photo	Metals North Pad
DSCN0077.JPG	Entry Sign photo	Voigt/Zane Pad
DSCN0078.JPG	Entry Sign photo	Cats Pad
DSCN0079.JPG	Entry Sign photo	Ethan Hall Pad
DSCN0080.JPG	Entry Sign photo	Oklahoma Pad
DSCN0081.JPG	Entry Sign photo	Windom Pad
MOV 3391.MP4	OGI video of the pilot and flare lighting. When inspectors arrived onsite, the flare was unlit and venting emissions. Just before MOV 3391 was captured, the flare appears to have relit.	Windom Pad
MOV 3392.MP4	After MOV 3391 was recorded, the flare was actively flaring but a trail of UBHC was observed from the OGI camera. MOV 3392 captures the trailing UBHC from the flare.	Windom Pad

DSCN0082.JPG	Entry Sign photo	Lincoln Pad
DSCN0083.JPG	Entry Sign photo	Pyramid Pad
DSCN0084.JPG	Tank Battery ID photo	Pyramid Pad
DSCN0085.JPG	Tank Battery ID photo	Pyramid Pad
DSCN0086.JPG	Entry Sign photo	Sneffels Pad
DSCN0087.JPG	Entry Sign photo	J.M. Hall Pad
DSCN0088.JPG	Entry Sign photo	Music West Pad
DSCN0089.JPG	Entry Sign photo	Music East Pad
DSCN0090.JPG	Slope of piping to flare	Music East Pad
DSCN0091.JPG	Entry Sign photo	Duck/Hans Pad
DSCN0092.JPG	Entry Sign photo	Trees East Pad
DSCN0093.JPG	Entry Sign photo	Trees West Pad
DSCN0094.JPG	Entry Sign photo	Peppers Pad
DSCN0095.JPG	Entry Sign photo	Mountains Pad
DSCN0096.JPG	Entry Sign photo	Wetterhorn Pad
MOV_3393.MP4	Continuous large plume of emissions venting from a thief hatch on the top of the tank.	Wetterhorn Pad
MOV_3394.MP4	Continuous large plume of emissions venting from a thief hatch on the top of the tank. Alternate view to MOV_3393.	Wetterhorn Pad
DSCN0097.JPG	Entry Sign photo	Clouds West
MOV_3396.MP4	UBHC Trail from LP Flare	Clouds West
DSCN0098.JPG	Entry Sign photo	Bross Pad
MOV_3397.MP4	Continuous large plume of emissions venting from top of tank, possibly tank 1465.	Bross Pad
MOV_3398.MP4	Continuous large plume of emissions venting from top of tank, possibly tank 1465.	Bross Pad
DSCN0099.JPG	Entry Sign photo	Sunshine Pad
DSCN0100.JPG	Entry Sign photo	San Luis Pad
DSCN0101.JPG	Entry Sign photo	Belford Pad
DSCN0102.JPG	Entry Sign photo	Yale Pad
DSCN0103.JPG	Entry Sign photo	Castle Pad
DC_3401.JPG	Entry Sign photo	Castle Pad
DC_3402.JPG	Entry Sign photo	James Pad
DC_3403.JPG	Entry Sign photo	Bugs Pad
DC_3404.JPG	Entry Sign photo	Character Pad
DC_3405.JPG	Flares	Leviathan Pad
MOV_3406.MP4	OGI video of flares. Pilot is lit on the HP 4-prong flare, but gas is not being combusted and puffs of UBHC were recorded.	Leviathan Pad
DC_3407.JPG	Flare control panel, displaying operating temperature.	Leviathan Pad

DC 3408.JPG	Flare control panel, displaying the Steffes control panel label.	Leviathan Pad
DC 3409.JPG	Entry Sign photo	Leviathan Pad
DC 3410.JPG	Entry Sign photo	Anderson Pad
DC 3411.JPG	Entry Sign photo	Huron Pad
DC 3412.JPG	Entry Sign photo	Longs Pad
MOV_ 3413.MP4	Unburned hydrocarbon emissions from air assist flare. Pilot was lit but no flame was visible, there was no heat signature, and the gas was not being combusted.	Longs Pad
DC 3414.JPG	Entry Sign photo	Elements East Pad
DC 3417.JPG	Entry Sign photo	Breakfast Pad
DC 3419.JPG	Entry Sign photo	Lizards Pad
MOV_ 3420.MP4	Continuous venting from HP flare tip. Pilot is lit but no flame is visible, no heat trail is visible on OGI camera. Small and continuous plume.	Lizards Pad
DC 3425.JPG	Entry Sign photo	Turtles/Butterflies Pad
MOV_ 3429.MP4	Continuous venting emissions from piping on top of the tank 998654. Inspectors observed a medium sized continuous plume. Due to wind, video may minimize extent of the leak.	Turtles/Butterflies Pad
MOV_ 3430.MP4	Continuous venting emissions from a thief hatch on the top of the tank. This leak was fixed while on-site by an Enerplus operator. Inspectors confirmed the thief hatch was no longer leaking.	Turtles/Butterflies Pad
DC 3431.JPG	Entry Sign photo	Turtle East Pad